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THE TEST OF LABOR—AN EVALUATION OF ITS PRESENT WORTH

CHAIRMAN'S ADDRESS

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The test of labor is an active, dynamic process by which a parturient demonstrates whether or not she can be safely delivered of a normal infant through the pelvis. The test of labor is worrisome, time-consuming, cumbersome and perhaps unscientific and old-fashioned, but is not its employment still the only way a physician can know with any degree of certainty that cesarean section is the best treatment in most borderline conditions of dystocia? It has been more or less dogmatically suggested in some quarters that the test of labor is now outmoded and no longer necessary, or at least, that its use can be greatly limited. The precision of roentgen-ray pelvimetry and perhaps cephalometry is advanced as one reason for this attitude. A study of recent experiences with the test of labor, therefore, seemed indicated to answer the question of the current advisability of the test of labor. An adjunct purpose was to ascertain whether or not other worth-while observations, results or lessons would emerge from the study.

In nearly all discussions of the test of labor two terms have appeared, namely, the test of labor and the trial of labor. The trial of labor implies a less drastic procedure; it is an early evaluation in labor to see if it appears worth extending into a true test or whether cesarean section seems indicated without further delay. The test of labor, on the other hand, implies a more extended and perhaps rugged test by real labor to see whether cervical dilatation and descent of the presenting part will permit vaginal delivery. This test may extend all the way from the attainment of fair, though incomplete, cervical dilatation up to complete dilatation with the membranes ruptured for two hours or more. In the cases studied no attempt has been made to differentiate between trials and tests of labor although trials rather than tests of labor probably occurred in our series in the majority of the 68 cases in which the labor lasted less than 12 hours. In this presentation, too, I have not adhered to the idea of some investigators that only patients who attain complete dilatation for variable periods of time with rupture of the membranes represent true tests of labor.

In some cases a trial rather than a test of labor doubtless should be employed. For example, a trial of labor could justly be used for a primigravida in the late thirties who has mild, but really suggestive, evidences of cephalopelvic disproportion with a mild to moderate preeclampsia and who has had eight years of antecedent infertility. If this patient starts out in labor on the left foot, so to speak, by early rupture of the membranes, weak uterine contractions and no evidence of progressive cervical dilatation or descent of the fetal head, it would likely be folly to persist with a long rigorous test. However, it seems to me that most patients who merit a trial of labor also deserve a test of labor. I have an uneasy suspicion that in some quarters the trial of labor is carried out under the guise of a feeble gesture at labor consisting of from one to a few hours of mild early uterine contractions while the membranes are intact. Such preliminary labor is in no sense either a trial or a test. The obstetrician may have overimpressed both himself and the patient and her family with the desirability of cesarean section and they proceed at once with relief to what is essentially an elective cesarean section done at term. These "gesture tests" if they exist are, of course, not true trials of labor and are an evidence of bad obstetric conscience.

I am surprised at the lack of recent literature on the subject of the test of labor. A number of reports on the clinical application and evaluation of pelvimetry touch intimately on the test of labor but papers specifically on the test of labor are very few. This paucity of reports on such an important obstetric subject distresses me and raises further questions. Do we really believe that the test of labor is passé? Now that cesarean section is so safe is there no need to concern ourselves with the long laborious test of labor and the accompanying anxiety, concern,

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and necessity for exercising judgment? Are we convinced that we may as well elect cesarean section with only the threat of a difficult labor and be sure of a good baby? I doubt if this is the usual viewpoint, namely, that because of the increased safety of cesarean section it should be used in all cases except those in which easy spontaneous or outlet forceps delivery will certainly obtain. Perhaps some other reason explains the lack of attention currently given the test of labor. My colleagues and I have a lively and enduring interest in the test of labor. We engage each week in earnest, sincere, and spirited discussions over the justification of our cesarean sections and conversely question whether certain vaginal deliveries might not have been better conducted as abdominal deliveries.

Some fascinating shifts and trends have been at work to change our views with regard to the test of labor in the last 20 years. These factors are the same ones that have accelerated a reduction of maternal mortality during these last two decades until it approaches zero. You all know them: the antibiotic and chemotherapeutic agents; the availability of enough suitable blood; better undergraduate and graduate obstetric education; lay education as to the value of antepartum care and the preventability of many obstetric tragedies; great increase in hospitalization for obstetric patients, and, finally, the concept of the worth and dignity of obstetrics as a full-fledged branch of medicine that has been achieved in our time. These same influences have worked to give us much more latitude in our conduct of the test of labor and to protect the obstetric patient whether she succeeds or fails in the test. The perfection of the low cervical and perhaps the extraperitoneal cesarean section plays a part. Prior to 15 years ago cesarean section had to be applied either electively or relatively early in the test of labor. Once the course of pelvic delivery was chosen and followed for a time, it had been chosen irrevocably, and there was no turning back without grave maternal risk. There is still perhaps some increased maternal risk when too long and stubborn a test of labor fails and eventuates in cesarean section, but there is much more latitude for a reasonable test than formerly.

Most of us remember the difficult forceps deliveries necessitated by the unequivocal commitments to vaginal delivery in former years. Many of our teachers were most skillful with the forceps, but even their skill was not always equal to the situation, and considerable immediate and remote maternal morbidity resulted from the then unavoidable obstetric trauma. Also fetal death and permanent injury followed in the wake of many of these hard forceps deliveries. Many of us were privileged to receive instruction in the use of the forceps from these able predecessors and to learn some measure of their art. We are glad, however, that occasions for difficult forceps delivery seem to arise less frequently because of the modest liberalization of the employment of cesarean section and a better opportunity to apply the test of labor. To be sure, a difficult forceps delivery probably will occur occasionally because of honest errors in judgment when evidences of false progress have teased us into near disaster or the patient has not availed herself of antepartum care or has otherwise failed to cooperate.

CASES STUDIED

Without prolonging this preamble I shall proceed to an analysis of our experience during the years 1932 through 1950 with 171 tests of labor in about 14,000 deliveries on the obstetric service of the Mayo Clinic. Throughout these years 490 cesarean sections were performed; the annual incidence of cesarean section varied from 2.5 to 4.5% of deliveries with an average of 3.5%. One maternal death occurred in 1933 in the group of patients who had the 490 cesarean sections. This patient also is included in the series of 171 who had tests of labor. The test of labor had been applied to only 16.7% of the patients who underwent cesarean sections. This may seem to be a small part of the total group undergoing cesarean sections, but many patients were not suitable for a test. We considered a large number of patients who had had previous cesarean sections, especially if multiple uterine scars existed, unsuitable for tests of labor. Many patients undergoing cesarean sections for placenta previa could not and should not have a prior test of labor. We considered too that when cesarean section was chosen for diabetic patients a prior test of labor usually was contraindicated. In a few instances the pelvis was so severely contracted that a test seemed inadvisable.

Of the 171 tests of labor 90 (52.6%) were successful with pelvic delivery and 81 (47.4%) were unsuccessful and cesarean section was required. This figure of 52.6% is lower than the usual figure of 60 to 70% successful tests given in the older literature. I am sure that many bona fide successful tests have not been included in this series. As one of my colleagues, Dr. Robert B. Wilson, stated, "Every delivery, in a sense, is a test of labor." I am positive, however, that each unsuccessful test has been listed, since they all eventuated in abdominal delivery and the number of cesarean sections is accurately recorded.

Let us examine first the main factors entering into the test of labor: the bony architecture of the pelvis, the duration of true labor and its relation to cesarean section, the size of the fetus, the quality of uterine action, and presentation and position in the light of our experience in these 171 cases. Infant and maternal morbidity and mortality, methods of delivery and effects on subsequent deliveries also will be examined and our observations presented.

THE PELVIC CAPACITY

Traditionally, the pelvic capacity has been thought to be the most important factor in the test of labor. The chief measurements which the roentgenologists compute from roentgen-ray pelvimetry are given in Table 1. These measurements follow the method of Peter Allen [1] of New Zealand. From these data, the given pelvis is coded as to capacity of the inlet, midplane and outlet by the figures 0, 1, 2, and 3, as noted in the left hand column under "probable mode of delivery." Most obstetricians agree that roentgen-ray pelvimetry is of much help. In earlier experience, however, it may have caused undue concern about some pelves. My colleagues and I do not neglect office mensuration in the antepartum clinic and add and

1. Allen, E. P.: Standardised Radiological Pelvimetry: Quantitative Aspects, Brit. J. Radiol. **20**: 45-54 (Feb.); Standardised Radiological Pelvimetry. Qualitative, ibid. **20**: 108-118 (March); Standardised Radiological Pelvimetry: A New Method of Measuring the Outlet, ibid. **20**: 164-169 (April); Standardised Radiological Pelvimetry: Interpretation of Pelvimetry, ibid. **20**: 205-218 (May) 1947.

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integrate this appraisal to that of the roentgenologist. Certainly, the whole decision cannot often be made after a passive view of the roentgenograms alone, as there are too many factors in labor that the roentgenogram alone does not include.

Our actual experience with contracted pelves in the 171 tests of labor is listed in Table 2. The classification used may not be as conventional as some, but it has been found to be sound clinically. Since contraction of the outlet per se has caused us almost no insurmountable difficulty in vaginal delivery it was not included as important in Table 2. If the midplane contractions are excepted, the chance for success or failure of the test of labor is about equal in the other three groups. The generally contracted pelvis may be a little more formidable in providing for a satisfactory test although not greatly so.

The patients with normal pelves are of special interest. About a third of those who had successful and unsuccessful tests had normal measurements. This whole group of patients with normal pelves fell naturally into the test of labor series, regardless of the fact that they possessed normal pelvic capacity in each instance. As labor advanced, real doubt was in our minds as to whether or not they could progress to successful vaginal deliveries. The 25 patients of this group who failed in the test are most interesting. There were nine whose infants weighed less than 3,500 gm. Four of these had prolonged labor characterized by inertia, and they attained only partial cervical dilatation and no engagement of the fetal head in labors lasting from 39 to 58 hours. Two other patients had chin posterior and brow presentations respectively. One patient had a partial atresia of the upper part of the vagina and placenta previa. The eighth patient had previously undergone cesarean section for placenta previa. She was admitted to our service with only 4 cm. of cervical dilatation after 24 hours of labor induced elsewhere by rupture of the membranes. The last patient of this group of nine was a primigravida, 39 years old, who had undergone extensive myomectomy for a huge leiomyoma. Elective cesarean section had been advised but was declined until the patient had been in labor 11 hours without significant progress.

All the remaining 16 of the 25 patients with normal pelves who failed in the test of labor had fetuses weighing more than 3,500 gm. with the tremendous average weight of the fetus of 4,145 gm. (9 lb. 3 oz.). It is obvious that many of these patients had cephalopelvic disproportion in spite of "normal" pelvic capacity. One rather extreme example might be cited:

The patient, a primigravida, 21 years old, spontaneously went into active labor with sufficient pains at term. In 24 hours the cervix had dilated up to 9 cm. The membranes, at that time, had been ruptured for five and a half hours. In spite of powerful uterine contractions, the lowest part of the presenting occiput did not quite reach the ischial spines and could be depressed no farther at the height of a contraction. Because it was felt that she had a very large baby, a low cervical cesarean section was performed, and a normal infant which weighed 5,200 gm. (11 lb., 8 oz.) was delivered.

TABLE 1.—*Guide to Prognosis Based on Measurement of Selected Pelvic Features*

Probable Mode of Delivery	Code	Conjugate Diameter, Mm.	Brim Area, Sq. Cm.	Midplane Area, Sq. Cm.	Bispinous Diameter, Mm.	Posterior Sagittal Diameter, Mm.
Vaginal delivery certain without any evidence of disproportion	0	More than 130	More than 130	More than 120	More than 110	More than 65
Reasonably certain, but there may be evidence of minor disproportion requiring forceps	1	105-130	105-130	95-120	90-110	50-65
Uncertain, and, if possible, will show clear evidence of disproportion	2	90-105	85-105	80-95	80-90	45-50
Extremely unlikely. Elective cesarean section justified	3	Less than 90	Less than 85	Less than 80	Less than 80	Less than 45

TABLE 2.—*Architecture of Bony Pelvis**

	Cesarean Section		Vaginal Delivery	
	No.	%	No.	%
Contraction				
General	25	30.9	22	24.4
Inlet	25	30.9	25	27.8
Midplane	6	7.3	14	15.6
Total	56	69.1	61	67.8
Normal measurements	25	30.9	29	32.2
Grand total	81	100.0	90	100.0

* These observations were made on 171 tests of labor.

DURATION OF LABOR

The duration of labor is only one factor in the test of labor and it is often difficult to tell whether recurrent painful uterine contractions do represent true labor. Recurrent painful uterine contractions which do not represent true labor will be unproductive of progress but may still produce deleterious maternal and fetal effects. Desultory labor surely clouds the picture. Duration of labor is important in the test of labor. The shorter tests often represent only trials of labor. Furthermore, the likelihood of delivery through the pelvis decreases as time goes by (Table 3).

CORRELATION OF INDICATIONS FOR CESAREAN SECTION WITH DURATION OF LABOR

The usual indication for cesarean section was, of course, some result of dystocia, such as fetopelvic disproportion, malpresentation of the fetus or uterine inertia. In the shorter tests multiple indications tend to exist (Table 4). Thus, when cesarean section was performed after less than 12 hours of labor, 75 indications for operation were presented by 29 patients—an average of 2.6 for each operation. Important adjunct indications in addition to those of disproportion were toxemia, pre-

TABLE 3.—*Duration of Labor*

Hours	Cesarean Sections		Vaginal Deliveries	
	Patients	%	Patients	%
Less than 12	29	35.8	39	43.3
12-24	30	37.0	33	36.7
More than 24	22	27.2	18	20.0
Total	81	100.0	90	100.0

TABLE 4.—*Indications For Cesarean Section in 81 Patients*

Length of Labor, Hr.	Indications		
	Total	Patients	Average
Less than 12	75	29	2.6
12-24	55	30	1.8
More than 24	38	22	1.7

mature separation of the placenta, previous amputation of the cervix, maternal age, previous infertility, bicornate uterus, asynclitism of the fetal head, uterine myomas, and other pelvic tumors. After a test of more than 24 hours, the indications for cesarean section dropped to 38 for 22 patients, or 1.7 per patient, and were almost solely

TABLE 5.—*Conditions Associated with Delivery*

	81 Cesarean Sections		90 Vaginal Deliveries	
	No.	%	No.	%
Uterine inertia	25	30.9	13	14.4
Contracted pelvis	56	69.1	61	67.8
Infants weighing more than 3,500 gm.	59	72.8	28	31.1

those of dystocia; namely, large fetus, uterine inertia and contracted pelvis. In this entire series the women were given a thorough test of ability to deliver vaginally as indicated by the average length of labor; for the failed tests this was 22½ hours as compared to 17½ hours for the successful tests.

FETAL SIZE

In a previous study [2] we were almost forced to conclude that the oversized infant was the greatest factor in the causation of difficult forceps delivery on our service. The same impression recurs in the analysis of these tests of labor. A fetus weighing in excess of 3,500 gm. was a commoner occurrence than either contracted pelvis or uterine inertia to render the test of labor unsuccessful with resultant cesarean section. The incidence of large babies in the two types of tests of labor is charted against a larger control group taken from fetal weights from one of our recent annual reports in the chart.

UTERINE INERTIA

Uterine inertia occurred 25 times (30.9%) in the group which failed tests and only 13 times (14.4%) in the group which had successful tests (Table 5). In the entire series uterine inertia appeared in only 38 cases (22.2%). Successful vaginal delivery occurred, however, in only 34.2% of cases in which uterine inertia did occur. Thus, the chances against delivery through the natural passages were nearly two to one in the presence of inertia.

TABLE 6.—*Position and Presentation in Relation to Cesarean Section and Vaginal Delivery*

Presentation	81 Cesarean Sections	90 Vaginal Deliveries
Brow	4	0
Face	5	1
Breech	2	3
Shoulder	1	0
Asynclitism	1	0
Total number	13	4
Per cent	16.0	4.4

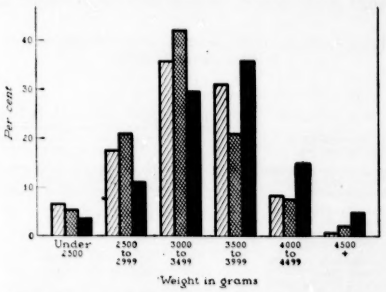
FETAL PRESENTATION AND POSITION

Gross abnormality of fetal presentation and position was an important secondary factor in failed tests of labor (Table 6). If breech presentation is excluded, abnormal presentation occurred in 12 cases and in 11 cesarean section was necessary to complete successful delivery.

2. Hunt, A. B., and Foust, G. T.: Difficult Labor in Relation to Forceps Delivery, New Orleans M. & S. J. **102**: 239-245 (Nov.) 1949.
3. Standard of morbidity of the American Committee of Maternal Welfare.

RESULTS

There was one maternal death in the series, that of a woman attended in 1933. She was admitted as an emergency patient after a 72-hour test of labor conducted elsewhere. The fetus was also lost. The fetal loss in the 171 tests was six infants (3.5%). Three were delivered by cesarean section and three vaginally (Table 7). One fetal death after cesarean section was that of an infant with a face presentation when section was performed thirteen hours after the onset of labor. The infant died in the neonatal period from unknown causes, and permission for necropsy could not be obtained. One was stillborn following premature separation of the placenta 12 hours after the onset of a test of labor. The third was stillborn and has already been mentioned. Among the infants delivered through the pelvis was a 4,310 gm. fetus who succumbed neonatally following a difficult forceps delivery. The two other infants delivered through the pelvis died neonatally and necropsy showed that one had an extensive cardiac anomaly and the other congenital absence of the bile ducts. If one corrects for the



Weight of fetus in 171 tests of labor, 1932 to 1950. The hatched blocks = control; the cross-hatched blocks = successful tests, and the solid blocks = unsuccessful tests.

two fetal anomalies, the fetal loss in the 171 tests of labor is 2.3%. All other infants (165) have been normal for the periods varying from two weeks to well over 15 years that they have been followed. In other words, the fetal and pediatric morbidity has surely been no greater than it would have been in a control series once the child survived delivery and the neonatal period. This same finding was observed in a series of our most difficult forceps deliveries over the same period of years.[2]

METHODS OF DELIVERY

Three patients failing in the test were treated by extraperitoneal cesarean section and one by cesarean hysterectomy. All the remainder, save for a few patients in early labor who underwent classical cesarean section, were delivered by the low cervical technic. The methods of vaginal delivery are given in Table 8. It will be observed that 80 of the 90 patients (88.9%) had either a spontaneous delivery or were delivered by outlet or low forceps.

MATERNAL MORBIDITY

Among the 81 patients who underwent cesarean section 35% had morbidity of some degree [3] while only 2.2% of the patients who were delivered vaginally had

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any degree of morbidity. Nineteen of the patients who had cesarean section had a rather minimal febrile morbidity (a temperature of more than 100.4 F.) on two successive days exclusive of the first postoperative day. However, 10 patients (13.0%) had significant evidence of morbidity. Two had pneumonia, two indeterminate fever for several days, one uterine infection during and after delivery, and five thrombophlebitis (as contrasted to one in the group who had vaginal deliveries).

In short, then, the morbidity for the mother following cesarean section was more than tenfold that following pelvic delivery. There were probably some remote maternal gynecologic morbidities resulting from the more difficult forceps deliveries due to pelvic relaxation that do not show up when standards of morbidity are based solely on fever as these were.

SUBSEQUENT OBSTETRIC EXPERIENCE WHEN DELIVERY WAS THROUGH THE PELVIS

The subsequent pregnancies among those patients who were successful in a test of labor is of much interest. Forty-eight subsequent deliveries were conducted at the clinic among women who had previously been successful in the test of labor as primiparas (Table 9). Thirty-six, or three fourths, either had spontaneous deliveries or were aided only by outlet forceps. But a fourth had some dystocia and six, or an eighth of the group, had severe dystocia, five of whom required cesarean section for delivery.

TABLE 7.—*Fetal Results in 171 Tests of Labor*

Condition of Infant	Cesarean Section	Vaginal Delivery
Immediately normal	56	68
Delayed respirations	22	19
Stillbirth	2	0
Neonatal death	1	3
Total	81	90

TABLE 8.—*Method of Delivery Through Pelvis in 90 Patients*

Method	Duration of Labor: Less Than 24 Hr. — Primigravidas	Less Than 24 Hr. — Multiparas	24 or More Hr. — Primigravidas	24 or More Hr. — Multiparas	Total*
Spontaneous	23	10	2	1	36
Outlet forceps	12	1	5	..	18
Low forceps	18	..	8	..	26
Midforceps	5	..	1	..	6
Breech	2	..	1	..	3

* Method of delivery of one patient designated as "forceps" only.

COMMENT

We have seen that both the trial and the test of labor are dynamic processes in which such major factors as fetal size, uterine action, pelvic capacity and fetal presentation pit themselves against each other to eventuate in successful pelvic delivery or to produce a threatening impasse in which abdominal delivery is indicated. Secondary important factors, such as the patient's age, previous infertility, pliability of the soft parts, and the existence of obstetric, gynecologic or medical situations, all play a role. Additional factors are scattered incidences of previous cervical amputation or previous fetal death from dystocia. An expression of the desires and attitudes of the patient and her husband and even other close family members deserves a hearing in close decisions.

I have stressed that the test of labor in a given case is often individual and it is frequently difficult for one physician to convey to another each item of reasoning and judgment he employed in selecting one mode or the other for delivery. If both share the observation and repeated examination of such a patient throughout labor, a mutual understanding is more likely to be obtained. This has probably given rise to the wise and charitable adage that a physician can never be too critical of the conduct of an individual delivery unless he is present. In rare circumstances, an unorthodox procedure may provide the solution of a difficulty, and the words "never" or "always" are seldom applicable in obstetrics.

TABLE 9.—*Subsequent Deliveries Among 48 of the Primigravid Women who had Deliveries Through the Pelvis After a Trial of Labor*

	Subsequent Delivery	
Spontaneous delivery	30	
Outlet forceps	6	
Low forceps	6	25.0%
Midforceps	1	
Cesarean section	5	
Total	48	

Nevertheless, facts and conclusions do come to the fore from this study and they result from the effects in labor of this triad of factors: fetal size, quality of uterine contractions, and size and shape of the pelvis (Table 10). Fetal size impressed us as the most important. A small baby is as important as a small pelvis in the test of labor. Good uterine action can produce surprising results in molding even a fair-sized head through an undersized pelvis. The greatest desirability for the test of labor is good uterine action and, conversely, uterine inertia is a dreaded factor in a test to see if vaginal delivery is feasible. Obstetricians can agree with Cosgrove [4] when he wrote, "It is my impression that in many cases in which pregnancy is terminated by cesarean section for fetopelvic disproportion in reality operation is done because of inefficient functioning of the uterine musculature." The futility of inertia is enhanced if the baby is oversized. If the fetal weight approaches gigantism, good uterine performance and measurements of the pelvis classed as adequate may be of no avail. Contraction of the pelvis, while important in the test, was noted in only 68.4% of the patients and more than 50% of these patients were delivered vaginally. From this study it seems that the importance of the borderline contracted pelvis, alone, has been exaggerated at the expense of uterine inertia and the oversized fetus in the test of labor.

TABLE 10.—*Effect of Fetal Size, Contracted Pelvis and Uterine Inertia on the Outcome of the Test of Labor*

	Cases		Cesarean Section		Vaginal Delivery	
	No.	%*	No.	%	No.	%
Uterine inertia	38	22.2	25	65.8	13	34.2
Contracted pelvis	117	68.4	56	47.9	61	52.1
Infants weighing more than 3,500 gm.	87	50.9	59	67.8	28	32.2

* This is the percentage of 171 cases.

4. Cosgrove, R. A.: Management of Pregnancy and Delivery Following Cesarean Section, J. A. M. A. **145**: 884-888 (March 24) 1951. Johnston, R. A.: in discussion on Cosgrove.

The final factor in the test of labor is judgment, and this is an intangible attribute that is difficult both to acquire and to discuss. Important errors in judgment are as costly in the test of labor as elsewhere in obstetrics. It would not be human if some errors did not appear in 171 consecutive decisions as to the method of delivery during the test of labor. Perhaps we persisted too long in some tests. The difficult forceps delivery of the baby, weighing 4,300 gm., who was lost was one error. One primigravida, aged 37 years, whose child had a face presentation, was probably left in labor too long (13 hours). Elective cesarean section would have been advisable if this abnormal presentation had been known in time. The abruptio placentae that destroyed one infant very suddenly during a test of labor, as a cesarean section was hurriedly performed because of it, would not have happened if we had done an elective section before the test. However, the abruptio placentae also could have occurred six or eight hours before an elective section might have been scheduled. This has happened previously. There is a small but real risk of fetal mortality associated with even elective cesarean section.

In teaching, the obstetrician has the important function of teaching by example as well as by word. My colleagues and I have tried to impress on our graduate students that the test of labor is an individual, useful process. We not only demonstrate it to them but we ask that they take a responsible, active part in its conduct. We insist that they learn to keep patients in good condition throughout the test and watch closely for signs of fetal distress. They have seen with us that many tests which seemed futile from the start remained that way until there was good reason to abandon the test and perform cesarean section. They also have seen tests that seemed fully as futile at the onset in which conditions advanced rapidly and easily to successful vaginal delivery. Thus they have learned with us that it is impossible to tell when delivery can be made through the pelvis until it is tried. From this observation, they could develop a philosophy about the test of labor to use when they start practice.

I believe, along with the group in which I work, that as nearly as possible, each cesarean section should be justifiable and defensible and that failure of the test of labor is one of the best justifications for cesarean section. The soundness of the indications for a patient's first cesarean section is vitally important. I do not subscribe to the dictum of "once a section, always a section" but I dislike "sweating out" labors with scarred uteri more frequently than is essential. It is easy to prove that the fecundity of women who deliver solely by cesarean section is much more limited than those who can deliver through the natural passages. Johnston,[4] for example, found the records of only seven women among more than 90,000 deliveries occurring in Houston, Texas, over a recent decade who had had four or more children when all deliveries were by cesarean section. With the increased safety of cesarean section, some liberalization in its use is justified and has come in such circumstances as gross malpresentation (such as shoulder and brow presentation), placenta previa, toxemia and possibly abruptio placentae. The usual cesarean section, however, carries more risk both as to maternal death and morbidity than the usual pelvic delivery.

CONCLUSIONS

From this study certain points need emphasis, certain impressions seem important and certain conclusions can be drawn. These are as follows:

1. The factors that have made for recent reduction in maternal mortality have provided much more latitude in applying the test of labor than prior to about 1937. This change should reduce the incidence, and I believe that it has, of very difficult, traumatizing forceps deliveries.

2. With more than 50% prospects for successful pelvic delivery and with no appreciable maternal mortality and with a fetal loss no greater than 2.3%, a reasonable trial or test of labor, as the case may be, is thoroughly justified.

3. The triad of fetal size, uterine inertia and contracted pelvis are the chief factors in the success or failure of the test of labor and are of importance in the order named. The effect of the contracted pelvis on the test of labor has been exaggerated at the expense of fetal size and uterine inertia. Of the adjunct factors fetal malpresentation is of special significance in the success or failure of the test of labor.

4. To date there is no better way to justify an initial cesarean section than a failed test of labor.

5. Successful tests of labor mean that about three fourths of the patients in future pregnancies will have pelvic deliveries but does not guarantee freedom from future dystocia, since the remaining fourth as indicated by our group will have some difficulty in subsequent labor. Of those who had difficult labor subsequently, about half did not have great difficulty but the other half had severe dystocia and usually failed the test of labor, and cesarean section was necessary.

6. The selection and conduct of the test of labor require a high degree of individualization in each case and, therefore, a fine quality of both the art and science of obstetrics. The test of labor is also the test of the obstetrician. It tests his powers of observation, vigilance, judgment, obstetric conscience and technical skill. By the exercise of these powers, good results can usually be obtained.

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Patient and Physician.—The common duty required of a physician lies in the recognition and treatment of disease. If he enlarges his study to cover life as affected by disease, and masters the psychology of the individual sick in body, he will widen his usefulness and reach a fuller life himself as a physician. He will dare to enter into the mind of his patient with imaginative sympathy, proving himself a friend in need. To professional skill he will join human warmth and understanding. By so doing, and only by so doing, will he accept the whole burden, and fulfil his destiny. If anyone seeks happiness, here it may prove to be. It is the second mile enjoined in the text: "And whosoever shall compel three to go a mile, go with him twain." The good physician will accompany his patient on the second mile—and to the end of the road.—Sir John Parkinson, The Patient and the Physician, *Lancet*, Sept. 15, 1951.

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PROFESSIONAL OBLIGATIONS

CHAIRMAN'S ADDRESS

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The honor of serving as Chairman of the Section on Anesthesiology carries with it the opportunity to present a paper, designated as the Chairman's address. The subject matter of such a presentation should be of general interest, one in which the author feels his audience is, or should be, deeply interested and one on which he considers himself fully qualified to speak. My personal feelings have always been, and the present is no exception, that programs of a purely scientific nature should afford some place for the consideration of intangibles involved in the application of such science. With this conviction I shall utilize the opportunity afforded to me along these lines.

I say frankly, and with no doubt in my mind, that medical organization from top to bottom has passed up many opportunities to round out the postgraduate education of its members by following the policy of making programs too scientific. This strict limitation to technical and investigative subjects has practically excluded the consideration and discussion of many important topics, invaluable to the practitioner in the application of his art. It would seem, wherever medical men are assembled for educational purposes, that some small part of the program could profitably be devoted to the presentment of facts concerned with professional conduct and the relation of the physician to his environment. I believe many anesthesiologists are sufficiently in accord with this viewpoint to advocate some modification in that direction. I feel matters of professional relationship and obligations are so important as to warrant presentation at least once at every large medical gathering. Prominent lay speakers have actually recommended the inclusion of another specialty in the field of medicine — that of public relations.

It is important, I think, that anesthesiologists accept one premise before considering professional obligations —that they are doctors of medicine first and trained specialists second. We must first cast aside the distorted opinion many of us are too prone to entertain—that our technical specialty, with its limited sphere, exempts us from proprieties and codes applicable to most physicians. We cannot assume that because of the nature of our work we have no time for the professional obligations the public expects of the average physician. The community accords a special place to the medical man and in turn makes special demands of him.

Most of us feel very keenly concerning the professional obligations involved in the esteem held by the public for the medical man. The public expects the very best that modern medicine has to offer. We are therefore obliged to make doubly sure, beyond any reasonable doubt, that we render top service. Assuming that an anesthesiologist is qualified to render top service, it behooves him to beware of the pitfall of carelessness and neglect, so often the exciting cause of disrespect to the specialty. Knowing one's limitations is a virtue appreciated by the competent and should be respected by those of limited ability. These moral and professional obligations I regard as paramount in the relations between anesthesiologist and patient.

The second most important professional obligation is the practitioner's support of organized medicine. Regardless of what one's personal opinions might be toward the activities of any single medical group, the fact can hardly be challenged that the American Medical Association, state medical societies, and large specialty organizations have done a magnificent job in representing the interests of all physicians. Too many of us take the accomplishments of these organizations for granted, without taking into consideration the basic fact that the strength of a large assembly is merely the sum total of the capacity of its individual members. Without efficient and active organization on a national scale, we would be practically nonexistent as a profession today. We are obliged to contribute more than dues and assessments to keep these organizations strong and effective in our behalf. We must actively support their main efforts and objectives in our own sphere of acquaintance. To produce the maximum good for most of the profession, we must support scientific programs and exhibits not merely by our presence but, if possible, by presenting a paper or an exhibit.

National specialty organizations, such as the American Society of Anesthesiologists, need more participation on the part of their average member. Far too many anesthesiologists get a free ride year after year while a handful of active members supply the push and make the sacrifices to keep the machine going. There are so many and varied phases of activity that surely most everyone could contribute something occasionally. We have a professional obligation which we are not assuming. As members in good standing we are morally obligated to adhere to the aims, objects, and ideals of our society. Ethical standards are the very backbone of any organization and are set forth for the guidance and benefit of the majority—not the select few in conspicuous places. Professionally we are obligated to accept the spirit of the code, adhere to its principles, and avoid being within the shadow of suspicion when it comes to interpretation. Let us keep within bounds by making our professional acts conform to our society statement of policy, which is meant to be liberal enough for most situations. In order to justify the public's high regard for the honest and competent physician, we cannot afford to continue to protect the unethical and unfaithful member of our ranks. We must face and solve the problem of what to do with those who would turn the practice of medicine into a "racket" and those who persist, despite

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warning, in practices defined explicitly as detrimental to the welfare of the profession as a whole.

As specialists in a more or less limited field, we dare not fail to take a very positive part in the affairs of our state and county medical society, the latter the very grass roots of the practice of medicine. We need the educational features of their scientific programs. We are always in danger of self-sufficiency by telling ourselves that general medical subjects are not in our field. We must be active and interested in the problems of all other physicians and the efforts put forth to solve them by regional and local medical societies. Here again we must remember we are first physicians and then anesthesiologists. It is the county medical society which controls the working machinery of the hospital staff and, indirectly, has much to do with cooperation afforded such specialties as our own. We need the help of the society, and we are obliged to contribute something real and genuine to the success of the society program.

The most poorly developed and inadequately executed professional obligation is the anesthesiologist's concern with hospital operation. Dr. Frank Leahy said not so long ago that physicians had better become interested in every phase of hospital operation or they would be controlled by hospitals. This is truer today than when that statement was made. Many factors well known to most of us are responsible for the increasing control of hospital management over medical staffs. In many places experiments are being made to supplement hospital income through devious schemes involving the subsidy of professional services. The department of anesthesiology is usually in a particularly vulnerable spot and frequently suffers a "shakedown" in one fashion or another.

In the interests of keeping hospitals out of the practice of medicine, it behooves every staff physician to insist upon management separating medical from nonmedical services to the patient. This involves giving the professional staff full control of all medical services and complete voice in the staff make-up. It also involves staff insistence that every physician rendering service to hospital patients be a full-fledged member of the staff, on a par with all other members, depending of course on whether he is a regular, associate, or junior member. The governing body of the staff must insist upon representation on the board of governors or trustees in order to have a voice in hospital policy and care of patients. Protection of the rights of young men on the staff and those in such specialties as roentgenology, pathology, anesthesiology, and physical therapy is necessary to prevent subsidation. All these features are moral and professional obligations incumbent upon staff physicians in the best interests of the patient and the physician.

Our profession is obliged to recognize today that medical care is not the exclusive domain of the medical profession. It is the concern of every citizen, and the profession must exercise care not to be accused of resentment when interested speakers attempt to discuss medical problems pertinent to a community or hospital. The physician has a professional obligation likewise to be a part of all educational, religious, and civic activities. In our complex way of living these days, at a time when every walk of life has some connection with politics and when politics seem to dominate the very direction and progress of all professions and business enterprises, it strikes me as rather ridiculous for physicians on the whole to feel it is beneath their professional dignity to take any part in politics. As an important segment of society, holding a very high public esteem, I feel we not only can but we are morally obliged to become active in a dignified way. I surely do not mean to recommend or condone entering politics as a pressure group for selfish aims. There are two very good reasons, as I see it, for taking part in politics. First, we must do what we can to interest and support competent and honest men in government. Second, we must protect ourselves and the public from unwise legislation and political action. The very survival of democracy and a revival of honesty and dignity in government requires that everyone take an interest in politics. There is not a single politician, large or small, from the President on down, who does not have a physician in whom he confides, whom he respects, and on whom he depends to protect and preserve his health. If only these close friends were to do their duty at the proper time, it would be safe to wager the interests of medicine would never be in jeopardy. It would also be more than an idle boast to say that properly organized professional interests, nationwide, could swing any political issue at any given time.

The reader must be thinking just what I'm sure most men think when confronted with an appeal for action, namely, it all sounds fine, but I don't think I could contribute much myself. It is time we physicians come down from our ivory towers and out of our scientific shells to play the part we are expected to play—both from the altruistic point and the point of self-defense and preservation. We must make up our minds to stop procrastinating and actually do something. Paying our assessment to fight government medicine is the least we can do. If we keep our own house in order, refrain from the dishonest practices so prevalent in many other walks of life, it could be that organized medicine would emerge as a lighthouse in a stormy and deranged society setup.

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Subdural Hematoma.—Without a history of trauma there is no syndrome of subdural hematoma and there are no physical signs which point unequivocally to their diagnosis. The physical signs . . . are only evidence of neurological dysfunction and do not differentiate one type of pathology from another. Encephalitis, neurosyphilis, brain tumor and cerebral hemorrhage can produce any one or all of these signs. It is more important to make an accurate decision concerning the need for additional diagnostic procedures, that is, trephine openings and ventriculography, than to make a bedside differentiation between various types of intracranial pathology. . . .

The greatest aid in making this decision is careful observation of the patient. An increase in the severity of focal signs, evidence of rising intracranial pressure, the gradual development of stupor with alteration of the temperature, pulse and blood pressure are singly or collectively evidence of progressive intracranial disease. These phenomena constitute an indication (in the absence of encephalitis, blood dyscrasias, primary neoplasm elsewhere in the body or other serious systemic disease) for neurosurgical intervention. The risk from such a method of management is slight and only by following such an approach can fatal errors be eliminated.—Clark H. Millikan, M.D.: Diagnosis of Chronic Subdural Hematoma, *The Journal Lancet*, August, 1951.

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OBESITY AND ITS RELATION TO HEALTH AND DISEASE

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One of the subtler and more serious health hazards of our time is obesity. It develops so gradually and under such pleasurable circumstances that treatment is often difficult. The victim, feeling hopelessly trapped in his own fat, tends to rationalize his condition. Not only can obesity become a physical impediment in itself, but it may predispose its victims to heart disease, diabetes, liver disease, and other complications.

There are many indications that overweight is becoming increasingly important in medical practice. More men and women are living to the ages in which adipose tissue is easy to acquire and difficult to lose. The high level of national income has permitted many persons to indulge their desire for food and drink, and too often this means high calory foods. Recently, the high cost of first-class protein foods has favored increased carbohydrate intake. On the other hand, a growing segment of the public is showing real interest in weight control. This appears to stem from a desire to learn and adopt changes in diet and mode of living that promise better health and longer life and improved physical appearance.

Obesity, lying in the twilight zone between health and disease, is a logical point of assault on the medical problems of older persons. Weight control is a positive approach to the maintenance of health and prevention of some of the major diseases of middle and later life. The problem is not an easy one for the physician. The solution involves the education of the patient and winning his cooperation. This in turn requires understanding from the physician of human motivation and behavior as well as nutrition in health and disease. The time has come for a more vigorous and rounded approach to the problem. It is our purpose in this paper to show the influence of obesity on morbidity, mortality, and prognosis, to point out some of the present limitations of our knowledge about weight reduction, and to indicate ways in which the practicing physician can utilize weight control as a tangible approach to preventive medicine in the adult population.

FREQUENCY AND CAUSES OF OVERWEIGHT

How many adults in this country are overweight? We cannot answer the question exactly because no sharp line divides the overweight from the normal-weight person. Under the circumstances, the most suitable basis for the answer is to take an arbitrary percentage departure from average weight for height. For men and women over 25 a fixed set of standards based on the average weight at the ages of 25 to 30 is recommended, with due allowance in the individual case for those factors in body structure which influence weight. The ideal weight tables now in popular use, which were prepared several years ago by the Metropolitan Life Insurance Company, take these factors into account.[1]

As a practical measure, we may define overweight as any deviation of 10% or more above the ideal weight for the person. On this basis at least one-fifth of the population over age 30, or about 15 million, are overweight, and a considerable number of younger people weigh more than is good for them. We would consider that a weight 20% or more above the ideal constitutes pathological overweight, or obesity which definitely requires correction. On this basis the number of obese adults is 5 million or more.

As for the cause of overweight, most critical students of the subject now agree that simple unadulterated overeating is the basic cause in the majority of cases.[2] Endocrine factors in the etiology of obesity cannot be disregarded, but obesity explainable solely on the basis of endocrine dysfunction is rare. No doubt a higher proportion of the exceptional cases come to the attention of physicians than of the common garden variety of overweight. Making allowance for this, we are probably safe in saying that overeating accounts for the overweight in at least 95% of the cases.

OVERWEIGHT AND IMPAIRMENTS

The association of overweight with many serious physical impairments is evident from numerous studies. Information is most abundant on circulatory disorders, and we shall refer only to the more recent and important contributions. Thomson [3] has studied the association between overweight and hypertension among Metropolitan Life Insurance Company employees reaching 40 between 1930 and 1943 for whom blood pressure records usually extended back many years. The frequency of diastolic levels of 90 mm. of mercury or over was analyzed in relation to the ponderal index (weight in pounds divided by height in inches). At 35 to 44 years, 26% of those classified as of heavy build had diastolic pressures of 90 mm. of mercury or over, as compared with 15% for persons of medium build and 9% for persons of light build. At 45 to 54 years, the figures among all groups were higher, but the differences according to body type persisted.

The recent report of Master, Dublin, and Marks,[4] based on a sample among 74,000 industrial workers, showed at every age and in both sexes a steady progres-

From the Statistical Bureau and the Health and Welfare Division of the Metropolitan Life Insurance Company.

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1. Ideal Weights for Women, Metropolitan Life Insurance Company, Statistical Bulletin, **23**: 6 (Oct.) 1942; Ideal Weights for Men, Metropolitan Life Insurance Company, Statistical Bulletin, **24**: 6 (June) 1943.

2. Rynearson, E. H., and Gastineau, C. F.: Obesity: The General Practitioner's Guide to the Treatment of the Obese Patient, Charles C Thomas, Publisher, Springfield, Ill., 1949. (An excellent source of references to the literature on obesity.)

3. Thomson, K. J.: Some Observations on the Development and Course of Hypertensive Vascular Disease, Proceedings of the 38th Annual Meeting, Medical Section, American Life Convention, White Sulphur Springs, W. Va., June 15-17, 1950.

4. Master, A. M.; Dublin, L. I., and Marks, H. H.: The Normal Blood Pressure Range and Its Clinical Implications, J. A. M. A. **143**: 1464 (Aug. 26) 1950.

sion in average blood pressure, both systolic and diastolic, with increase in body weight for height. In general, the largest differences were found at the older ages and among women. Levy and his associates [5] found that sustained hypertension in army officers developed in those overweight at a rate two and one-half times as high as in those not overweight.[6] Earlier, Reed and Love [7] found that the men with or in whom degenerative cardiovascular-renal disease later developed were heavier than the average weight of the officer group as a whole.

Significant deviations from normal electrocardiogram findings are also relatively most frequent in overweight persons. In Short's [8] study based on 1,000 men receiving periodic health examinations, 15% of those who were more than 25% overweight for their height had definite impairments of this character, as compared with 8.5% among those of average weight and 2% among those underweight. Similar results were obtained in a study of employees of the Metropolitan Life Insurance Company.[9]

The frequent association between vascular change and obesity is illustrated in different fashion by Wilens' [10] excellent study based on autopsy material. He divided his cases into three groups according to the state of nutrition evaluated at autopsy. Considering only evidence of advanced atherosclerosis, he found that the proportion of obese with this condition was consistently and markedly in excess. For example, at ages 45 to 54, 20% of the obese had advanced changes in the arteries as compared with 6.7% of those classed as of poor nutritional status; at 65 to 74 the proportions were 45.3% and 20.2% respectively. Coronary atherosclerosis of advanced degree was also more frequent in the obese than in the others, the difference being especially great in men.

The facts with regard to diabetes are clear-cut. It will suffice to cite the experience of Joslin and his associates.[11] Using as a basis the previous maximum weight prior to onset, they found that among patients 40 and over at onset, 60% were at least 20% over average weight and an additional 25% moderately overweight, or a total of 85% with some degree of overweight. Only 5% were underweight.

Gallbladder disease of a degree sufficient to cause clinical symptoms is especially frequent in those overweight.[12] This characteristic is commoner in women than in men. For example, a study of the weight of applicants accepted for life insurance with a history of gallstones or cholecystitis showed that 41% of the men and 53% of the women were overweight.

The facts on morbidity from cancer in relation to body build are quite meager, but for cancer of the endometrium, at least, there is good evidence that frequency is higher in overweight women than in women of lighter build. The largest series of cases is that of Hertig and Sommers,[13] who found that 44% of their patients weighed 160 lb. (72.6 kg.) or more as compared with 34% of the women of the same age in the general population. Other observers [14] have reported abnormally high frequency of obesity in women with cancer of the genital organs.

Degenerative arthritis is the commonest crippling disease in which overweight is believed frequently to be an etiological factor. Good statistical evidence is meager. Britten [15] reported a history of rheumatism or gout to be appreciably more frequent with men who were markedly overweight than with those markedly underweight. Harmon's [16] study of 94 cases of osteoarthritis of the hip showed that obesity of a significant degree was present in one-third of the cases.

Hernia appears to be more frequent in overweight persons. The studies of the Cincinnati Heart Council of white male clerical and factory workers showed a significant excess of inguinal hernia among overweight men as compared with average or underweight men.[17] The frequency of postoperative hernia is also commonly stated to be greater in those overweight than in others.

Impairment of kidney function is also most frequent in those overweight. Statistical studies of periodic health examination data show that the proportion of those with albuminuria and glycosuria of significant degree is higher among overweight persons than among average and underweight persons.[18]

Mention should also be made of postural changes resulting from obesity which not only interfere with good body mechanics and sometimes cause spinal deformity but also impair respiratory and circulatory efficiency. Kerr and Lagen [19] have described this postural syndrome and its effects, and Short and Johnson [20] have shown that with increasing weight vital capacity decreases.

5. Levy, R. L.; White, P. D.; Stroud, W. D., and Hillman, C. C.: Overweight: Its Prognostic Significance in Relation to Hypertension and Cardiovascular-Renal Diseases, J. A. M. A. **131**: 951 (July 20) 1946.

6. This comparison is based on cases without transient tachycardia.

7. Reed, L. J., and Love, A. G.: Biometric Studies on U. S. Army Officers—Somatological Norms in Disease, Human Biol. **5**: 61 (Feb.) 1933.

8. Short, J. J.: The Increase of Electrocardiographic Changes with Obesity, Proc. Life Ext. Exam. **1**: 82 (July-Aug.) 1939.

9. Basic Studies of the Aging Cardiovascular System, New York, Metropolitan Life Insurance Company, 1940.

10. Wilens, S. L.: Bearing of General Nutritional State on Atherosclerosis, Arch. Int. Med. **79**: 129 (Feb.) 1947.

11. George F. Baker Clinic and Metropolitan Life Insurance Company: Diabetes in the 1940's, New York, 1940. Metropolitan Life Insurance Company Press, 1940.

12. Dublin, L. I.; Jimenis, A. O., and Marks, H. H.: Factors in the Selection of Risks with a History of Gall Bladder Disease, Proc. A. Life Insur. M. Dir. America **21**: 34, 1934. Mentzer, S. H.: A Clinical and Pathologic Study of Cholecystitis and Cholelithiasis, Surg. Gynec. & Obst. **42**: 782 (June) 1926.

13. Hertig, A. T., and Sommers, S. C.: Genesis of Endometrial Carcinoma: Study of Prior Biopsies, Cancer **2**: 946 (Nov.) 1949.

14. Moss, W. T.: Common Peculiarities of Patients with Adenocarcinoma of the Endometrium: With Special Reference to Obesity, Body Build, Diabetes and Hypertension, Am. J. Roentgenol. **58**: 203 (Aug.) 1947. Morrin, K. C., and Max, P. F.: Carcinoma of the Body of the Uterus: Clinical and Pathological Review, Surg. Gynec. & Obst. **68**: 30 (Jan.) 1939. Frank, L. W.: The Surgical Treatment of Cancer of the Body of the Uterus in the Obese, Southern M. J. **37**: 24, 1944.

15. Britten, R. H.: Physical Impairment and Weight: A Study of Medical Examination Records of 3,037 Men Markedly Under or Over Weight for Height and Age, Pub. Health Rep. **48**: 926 (Aug. 4) 1933.

16. Harmon, P. H.: Pathology and Treatment of Osteo-Arthritis of the Hip, with Special Emphasis on Pin Arthrodesis and Cup Arthroplasty, Pennsylvania M. J. **45**: 948 (June) 1942.

17. Life Conservation Studies: I. Physical Impairment Among Office Workers: II. Physical Impairment Among Industrial Workers: A Report Based on the Complete Physical Examination of 1,000 Male Machine and Hand Tool Operators, The Heart Council of Greater Cincinnati, 1929-1930.

18. Dublin, L. I.; Fisk, E. L., and Kopf, E. W.: Physical Defects as Revealed by Periodic Health Examinations, Am. J. M. Sc. **170**: 576 (Oct.) 1925. Britten.[15]

19. Kerr, W. J., and Lagen, J. B.: The Postural Syndrome Related to Obesity Leading to Postural Emphysema and Cardiorespiratory Failure, Ann. Int. Med. **10**: 569 (Nov.) 1936.

20. Short, J. J., and Johnson, H. J.: The Effect of Overweight on Vital Capacity: A Study of 196 Individuals, Proc. Life Ext. Exam. **1**: 36 (March-April) 1939.

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It is widely held that puberty is delayed in obese children and that stout women are less fertile than thin women. These and other conditions are often cited as indicative of the frequency of endocrine dysfunction in the obese. However, these beliefs lack good statistical support, and there are some indications to the contrary.[21] Certainly there is room for more carefully controlled studies of the relation of obesity to endocrine function in children and women.

OVERWEIGHT AND MORTALITY

In many respects the most abundant source of information available on the effects of overweight is the mortality experience on insured lives. We shall limit ourselves to the major findings in the most recent studies of overweight mortality. In presenting these results we would call attention to the fact that these studies exclude those overweight persons with any impairment which itself would involve an extra premium or rejection for life insurance. Since, as we have seen, certain serious impairments are more frequent in overweight than in lighter weight persons, especially in middle or later life, the results actually understate the effects of overweight on mortality.

The latest intercompany study on men covered the period from 1909 to 1928.[22] It showed that as a group the overweight men had a mortality well above average at every age and that in general the greater the degree of overweight the higher the mortality (see Table 1). For example, with men 20 to 29 the mortality of those 25 to 34% overweight was 34% above the general average and with those 35% or more overweight 63% above average. If comparison is made with the weight group with the lowest mortality, the disadvantage of overweight is even more marked. It should be noted that the mortality of overweight persons in this study was relatively less than in previous studies. This reflects the increased care in selection of overweight persons, which was stimulated by the findings of earlier studies.

The analysis of mortality by cause in this study distinguished only three broad body-build groups—namely, those 25 lb. (11.3 kg.) or more underweight, those 50 lb. (22.7 kg.) or more overweight, and the large intermediate class. It covered a short list of diseases. Even so, the obese group showed consistently the highest death rates from degenerative cardiovascular and renal diseases, diabetes, and cirrhosis of the liver.

The most comprehensive recent study of mortality of women according to body build was made by the Metropolitan Life Insurance Company on the basis of its records covering the period from 1922 to 1936.[22a] The experience on standard and substandard or rated cases was studied separately. In both parts of this study, the mortality among overweight women, and especially among the obese, was higher than average, although the figures do not show consistently a progression of increasing mortality with increasing weight over the average. The trend, however, was unmistakable. The study gave some indication that overweight is relatively less harmful to women than to men in terms of effect on longevity. However, a longer duration of follow-up than was afforded by this study is needed to establish the fact.

In many respects the findings of this study with regard to specific diseases are more informative than the overall mortality picture. Relatively the greatest excess mortality was found for diabetes and diseases of the gallbladder, especially gallstones. At ages over 40 the mortality from diabetes among overweight women insured at standard rates was about three times as high as among average and underweight women, and the experience on women insured at substandard rates showed that the most obese had a mortality eight times as high. Gallbladder disease caused a consistently higher mortality among overweight women than in those of lesser weight, and among the obese the rate was many times higher than average, the difference being relatively greater among those insured under the age of 40 than over. Most important, however, are the facts regarding cardiovascular and renal diseases because they cause such a large part of the total mortality. For each of these conditions there was a fairly steady rise in mortality with increasing weight. Among women insured at standard rates, this mortality was in the aggregate 50% or more higher among women 25% or more overweight than among average or underweight women, and, with some variation in degree, the findings were fairly consistent according to age. Among the women limited to substandard insurance rates the mortality was higher.

TABLE 1.—*Mortality of Men According to Body Build*

Body-Build Group	Per Cent Actual of Expected Deaths *			
	Ages 20 to 29	Ages 30 to 39	Ages 40 to 49	Ages 50 to 59
Underweight (%):				
15 or more	115	103	85	79
5 to 14	101	95	77	82
Average weight	93	84	86	93
Overweight (%):				
5 to 14	99	90	97	91
15 to 24	107	120	117	118
25 to 34	134	137	141	122
35 or more	163	137	141	143

* Death rate of all standard risks equals 100%. Experience of 32 life insurance companies, standard and substandard cases combined, 1909 to 1928, by ages at issue of insurance.

Note that these data relate to men 5 ft. 3 in. to 6 ft. 2 in. tall.

The mortality from puerperal causes was also somewhat higher among the overweight women than the others. The results with regard to neoplasms are not clear-cut but indicate that at least for certain categories of cancer the mortality from them is significantly higher in overweight women than in others. This is consistent with clinical observation. The mortality from benign tumors of the uterus was also higher among overweight women.

The most adequate of the earlier studies of body build in relation to mortality by age and cause is based on the

21. Bruch, H.: Obesity in Relation to Puberty, J. Pediat. **19**: 365 (Sept.) 1941. Rynearson and Gastineau.[3]

22. The Actuarial Society of America and the Association of Life Insurance Medical Directors: Supplement to the Medical Impairment Study, New York, The Actuarial Society of America, May, 1932.

22a. Dublin, L. I., and Marks, H. H.: The Build of Women and Its Relation to Their Mortality: Preliminary Report, Proc. A. Life Insur. M. Dir. America (1937) **24**: 47, 1938. Dublin, L. I., and Marks, H. H.: Mortality of Women According to Build—Experience on Substandard Issues, Proc. Assn. Life Insur. M. Dir. America (1938) **25**: 203, 1939.

experience on men insured by the Union Central Life Insurance Company.[23] Although the material is old, it represents a long-term experience when selection of overweight men was less rigid. In this study the total death rate among men 45 and over showed a steady rise with increasing weight. The mortality among those

TABLE 2.—*Mortality of Overweight Men*

Age at Issue	Per Cent Actual of Expected Deaths *
All Ages	150
20-29	180
30-39	169
40-49	152
50-64	131
Time Elapsed Since Examination (Yr.)	
Under 5	133
5-14	152
15-24	160
Degree of Overweight	
Moderate obesity	142
Marked obesity	179

* Men limited to substandard insurance because of overweight. Death rates of male standard risks equals 100%. Experience of Metropolitan Life Insurance Company, Ordinary Department. Cases insured in 1925 to 1934 traced to 1950.

25% or more overweight was 86% above that among normal-weight men. This study showed that in the aggregate the mortality from cardiovascular-renal diseases among overweight men was 60% higher than in average-weight men and more than double that for underweight men, the mortality from diabetes among overweight men was two and one-half times that among normal-weight men and four times that among underweight men. Other causes which produced a significantly higher mortality among overweight men than among lighter-weight men were cancer, cirrhosis of the liver, appendicitis, and accidents.

NEW MORTALITY STUDY OF OVERWEIGHT PERSONS

The several studies that have been made in the past by life insurance companies on mortality in relation to body build have shown consistently that among overweight persons there is a substantially higher mortality than among persons of average weight. The findings differ only in detail from one study to another. Naturally, the question arises as to whether there has been any fundamental change in the situation in recent years. In order to answer this question we have made a new study based on the experience of the Metropolitan Life Insurance Company on applicants in the Ordinary Department who were considered sufficiently overweight to warrant charging a higher premium solely because of their weight. These were persons who were limited to substandard insurance by the Company. We have studied only those persons who were first-class risks in other respects: They had no serious impairments or adverse medical history and engaged in nonhazardous occupations. We have included applicants who were between 20 and 64 at examination and who were insured between 1925 and 1934. We have traced these insured persons to 1950. Thus, the experience stretches over the period of the last 25 years. This has enabled us to assess the long-range as well as the immediate effects of overweight on mortality. The experience is a large one, consisting of 25,998 men and 24,901 women. The number of deaths recorded during the period of observation was 3,713 among the men and 2,687 among the women. We have compared the mortality of these overweight persons with the experience on persons accepted for standard insurance and followed over the same period. Separate comparisons were made for each sex.

The new study tells a familiar story. Uniformly the death rates among these insured overweight persons were substantially higher than normal. The degree of excess mortality varies, but among both men and women, among young and old, and during the early and recent years of the experience the mortality among the overweight persons was high.

The overweight men studied had a mortality in the aggregate one and one-half times that of insured men in our standard experience (see Table 2). When the overweight men were divided into groups according to age at examination, the mortality, relative to normal, was greatest at the younger ages and least at the older ages. Thus, in the groups 20 to 29 at examination the number of subsequent observed deaths was 80% greater than expected by standard experience as compared with 31% in the group 50 to 64 at examination.

In men the penalty of obesity in terms of mortality is deferred to some degree. Thus, although the mortality ratios are high regardless of the time elapsed since examination, they tend to increase with time. In the aggregate the number of observed deaths during the first five years

TABLE 3.—*Mortality of Overweight Women*

Age at Issue	Per Cent Actual of Expected Deaths *
All ages	147
20-29	134
30-39	152
40-49	150
50-64	138
Time Elapsed Since Examination (Yr.)	
Under 5	151
5-14	144
15-24	149
Degree of Overweight	
Moderate obesity	142
Marked obesity	161

* Women limited to substandard insurance because of overweight. Death rates of female standard risks equals 100%. Experience of Metropolitan Life Insurance Company, Ordinary Department. Cases insured in 1925 to 1934 traced to 1950.

was 33% above the expected, 52% in the period five to 14 years after examination, and 60% in the latest period 15 to 24 years after examination. These differences are particularly striking among those in the younger ages at issue of insurance. The degree of overweight also influences the results. The men with marked obesity had in the aggregate a mortality 79% above normal as compared with 42% for those who were moderately obese. The difference was more pronounced among those under age 40 at issue than those over 40.

23. Dublin, L. I., and Marks, H. H.: The Influence of Weight on Certain Causes of Death, Human Biol. **2**: 159 (May) 1930.

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The overweight women also had in the aggregate a mortality about one and one-half times the expected (see Table 3). Age variations in the ratios were less among women than men, the excess of observed mortality over the expected varying from a minimum of 34% at ages 20 to 29 to a maximum of 52% at ages 30 to 39. Among the women, too, the mortality was high regardless of the time elapsed since examination, but the ratios at all ages combined were fairly constant in the three broad time periods used in this analysis. However, among the younger women the excess mortality definitely increased with time. Among the women, as among the men, those markedly obese had a higher mortality than those who were moderately obese. In the former group the recorded mortality was 61% in excess of the standard, as compared with 42% in the other group. Among women also the difference was larger among those under 40 when insured than among those over 40.

With respect to the causes of death which account for the excess mortality of the overweight persons studied, the story is again a familiar one. This part of the analysis is as yet incomplete, but we know definitely that the degenerative diseases of the heart, arteries and the kidneys contribute most of the extra deaths. Among both men and women the number of observed deaths from these causes is about 70% greater than the expected. The situation in this respect is relatively worse among those under 45, when the mortality is at least double the expected. Among the major diseases, diabetes causes proportionately the greatest excess mortality—more than three times the expected. The mortality from cirrhosis of the liver is far above normal, especially among men. The death rate from gallbladder disease, particularly gallstones, was high among women. Deaths from childbearing also appear to be significantly in excess of normal. This result must be interpreted with caution because accurate comparison cannot be made from the data available. However, the crude figures show so large an excess that they can be taken as a good indication that obesity constitutes an extra hazard in pregnancy.

OVERWEIGHT AND PROGNOSIS

Obesity is an added handicap in many conditions and diseases. A few illustrations will bear this out.

The course of pregnancy and childbearing is more often beset with difficulties for the overweight than for average or underweight women, and both mother and child are affected (see Table 4). The studies by Odell and Mengert,[24] Matthews and Der Brucke,[25] and Sheldon [26] all indicate a higher frequency of complications during pregnancy and delivery and an increase in both maternal and fetal mortality. Operative incidence is also higher among the overweight women. The proportion of large babies is high, and it has been observed that in women bearing large babies diabetes is more likely to develop eventually than in other mothers.[27] Chesley and his associates [28] further report that in 75% of the women of heavy build with a history of eclampsia toxemia develops in a subsequent pregnancy, as compared with 26% of the women with light build.

Surgeons are eloquent about the special difficulties and problems in operating on obese persons, but reliable statistics on either this aspect or on differential mortality in surgery according to build of patients are hard to find. In 1934 Seifert [29] reported the experience of the University Surgical Clinic at Würzburg for a number of conditions, and the facts are of particular interest with respect to acute appendicitis and cholecystitis. The operative mortality in appendicitis among the obese was 10% as compared with 2% among persons of lighter weight; from cholecystitis it was 23% among the obese as compared with 6% in the lighter weight persons. While these differences may not be explained wholely on the basis of build, this would seem to be a significant factor.

Postoperative embolism and thrombosis is significantly more frequent in overweight persons.[30] In the experience of the Mayo Clinic, as reported by Barker and his associates, thrombo-embolism occurred in 8% of the women weighing more than 200 lb. (90.7 kg.) who underwent abdominal hysterectomy, as compared with 4% of the women weighing less than that. For intestinal operations the frequency of thrombo-embolism was 7.1% in the group of women weighing 200 lb. or more, as compared with 3.2% among persons of lesser weight.

TABLE 4.—*Observed and "Normal" Incidence of Complications in Obese Pregnant Women Weighing 200 Pounds or More*

	Odell and Mengert *		Matthews and Der Brucke †	
	Obese	Normal ‡	Obese	Normal ‡
Operative incidence (%)	11	5	20	4.5
Toxemia (%)	31	...	45	...
Hypertension (%)	27	15-20	35	15-20
Stillbirths (%)	3.4	2.5	9.5	5

* 761 pregnancies in 611 women. Excludes cases in which child weighed less than 1,500 gm. University of Iowa College of Medicine 1936 to 1942.
† 200 pregnancies. Coney Island, N. Y., Hospital 1932 to 1936.
‡ General hospital or population experience.

In overweight persons with transient hypertension, sustained hypertension develops quicker than in those of lighter build, and they become disabled by cardiovascular disease earlier. In the study of army officers with

24. Odell, L. D., and Mengert, W. F.: The Overweight Obstetric Patient, J. A. M. A. **128:** 87 (May 12) 1945.

25. Matthews, H. B., and Der Brucke, M. G.: "Normal Expectancy" in the Extremely Obese Pregnant Woman, J. A. M. A. **110:** 554 (Feb. 19) 1938.

26. Sheldon, J. H.: Maternal Obesity, Lancet **2:** 869 (Nov. 12) 1949.

27. Miller, H. C.; Hurwitz, D., and Kudder, K.: Fetal and Neonatal Mortality in Pregnancies Complicated by Diabetes Mellitus, J. A. M. A. **124:** 271 (Jan. 29) 1944. Herrstein, J., and Dolger, H.: The Fetal Mortality in Women During the Prediabetic Period, Am. J. Obst. & Gynec. **51:** 918 (June) 1946. Gilbert, J. A. L., and Dunlop, D. M.: Diabetic Fertility, Maternal Mortality, and Foetal Loss Rate, Brit. M. J. **1:** 48 (Jan. 8) 1949. Gilbert, J. A. L.: The Association of Maternal Obesity, Large Babies and Diabetes, ibid. **1:** 702 (April 23) 1949.

28. Chesley, L. C.; Somers, W. H., and Vann, F. H.: A Further Follow-Up Study of Eclampsia, Am. J. Obst. & Gynec. **56:** 409 (Sept.) 1948.

29. Seifert, E.: Zur Operationsprognose bei fettleibigen und bei mageren Kranken, München. med. Wchnschr. **81:** 1917 (Dec. 13) 1934.

30. Henderson, E. F.: Fatal Pulmonary Embolism: A Statistical Review, Arch. Surg. **15:** 231 (Aug.) 1927. Snell, A. M.: The Relation of Obesity to Fatal Postoperative Pulmonary Embolism, ibid. **15:** 237 (Aug.) 1927. Counseller, V. S., and McKinnon, D. A., Jr.: Factors Influencing the Incidence of Postoperative Thrombophlebitis in Gynecologic Surgery, Surg., Gynec. & Obst. **75:** 114 (July) 1942. Barker, N. W.; Nygaard, K. K.; Walters, W., and Priestley, J. T.: A Statistical Study of Postoperative Venous Thrombosis and Pulmonary Embolism: II. Predisposing Factors, Proc. Staff Meet., Mayo Clin. **16:** 1 (Jan. 2) 1941.

transient hypertension and transient tachycardia by Levy and his associates,[5] blood pressure and pulse rate on an annual basis both averaged about 50% higher in overweight persons than in those not overweight.

With regard to cancer, the only contribution of which we know on the relation of obesity to prognosis is Hildreth's [31] report on five-year survivorship among patients with cancer of the cervix treated by irradiation. This showed a five-year survivorship rate of 37.5% among patients weighing 170 lb. (77.1 kg.) or more as compared with 54.6% among patients weighing less. The author emphasizes the technical problems involved in the irradiation of obese women.

In persons with nondiabetic glycosuria diabetes is more likely eventually to develop if they are overweight than if they are not. In the experience of the George F. Baker Clinic [32] on patients followed for at least a 10-year period after the original diagnosis of nondiabetic glycosuria, the frequency of subsequent diabetes was four times as high in overweight patients as in those not overweight.

Studies of life insurance experience show that in several groups of impaired risks the mortality was higher among those overweight than among those underweight. Examples of this are found among persons with a history of asthma [33] or bronchitis [34] and among persons with albuminuria [35] or hyperglycemia.[36]

GENERAL RESULTS OF WEIGHT REDUCTION

In spite of the evidence that has accumulated on the serious effects of overweight on health and longevity and the wide dissemination of this knowledge to both physicians and the general public, there is surprisingly little information available on the long-term results of weight reduction, either as a hygienic measure for prevention of disease or as a procedure in the treatment or alleviation of various diseases and conditions. Adequate long-term studies of weight reduction are few and indicate that only a minority of overweight persons persist in their effort to reduce long enough to reap the greatest potential benefit. Beyond that, we lack properly controlled studies to show whether or not the benefits of weight reduction in terms of health and longevity are as real and substantial as they are assumed to be. A real need exists for new and better data on many aspects of weight reduction.

The outstanding study is that by Fellows [37] on 294 employees at the Home Office of the Metropolitan Life Insurance Company. Under treatment which relied in most cases on diet alone, 81% lost weight, but 19% failed to lose. Among 53% the loss exceeded 10 lb. (4.5 kg.) and among 12% 30 lb. (13.6 kg.). Among 224 patients who were available for examination a year later, 32% had shown a further loss averaging about 4 lb. (1.8 kg.), but 68% had gained, the average increase being 10.7 lb. (4.8 kg.). Five years later 21% of 193 persons available for examination showed further loss of weight, averaging about 9 lb. (4.1 kg.), but 79% had gained, the average increase being 18 lb. (8.2 kg.). Of 33 persons with definite physical signs of disease associated with overweight, 17 had suffered no progression of their condition and were better symptomatically and clinically five years after weight reduction than they were before. All but two of these maintained a considerably lowered weight.

Danowski and Winkler [38] reported the results of treatment over an extended period of obese patients at the Metabolism Clinic of the New Haven Hospital. They obtained some degree of success with 72% of their patients, with the results somewhat better among nondiabetics than among diabetics. With 23% of the nondiabetics the long-term loss of weight was 30 lb. or more, and with an additional 35% it was 10 to 29 lb. (4.5 to 13.2 kg.). Rony [39] and Gray and Kallenbach [40] have also reported long-term results, but on relatively small numbers of patients.

The report of Adlersberg and Mayer [41] on results of treatment of overweight in 299 patients on various dietary and drug regimens reveals certain general findings of interest, although it is concerned with short-range results. The period of treatment ranged from a few months to a year or more in a few cases. The average weight loss during treatment for the entire group was only about 9 lb., but weight loss tended to be higher for the obese than for those less overweight. Results with diet alone were better than with diet plus the use of thyroid and almost as good as with diet plus the use of amphetamines. Regardless of the regimen or degree of overweight, the rate of loss in the early months of treatment was significantly higher than in the later months.

WEIGHT REDUCTION IN SPECIFIC CONDITIONS

Even more meager are the facts with regard to long-term results on the effects of weight reduction in the obese suffering from chronic diseases. Adlersberg and his associates [42] have reported the results of weight reduction in 15 overweight hypertensive patients followed three years or more after completion of a weight-reduction course. On the whole, the results were better among those who maintained or extended their weight reduction than among those who relapsed.

Ley [43] has reported the general effects on blood pressure levels in overweight and normal-weight persons of

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37. Fellows, H. H.: Studies of Relatively Normal Obese Individuals During and After Dietary Restrictions, Am. J. M. Sc. **181**: 301 (March) 1931.
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weight changes over a five-year period. It should be kept in mind that average blood pressure figures show some increase over a five-year period. Ley found that in persons with a weight loss of 5% or more there was a small decline in the average systolic reading, both among overweight and normal-weight persons; whereas, among those who gained or those whose weight loss was less than 5% the average increased. In general, the diastolic averages showed the same trend.

We shall omit discussion of the dietary treatment of hypertension, which is so much to the fore today, partly because specific data on long-term results with overweight hypertensive patients are lacking but also because the situation as to the specific benefits of special diets now in vogue remains to be clarified.

Newburgh [44] demonstrated that reducing obese middle-aged diabetics to normal weight resulted in a return to normal glucose tolerance in nearly 75%. Improved tolerance was observed in 50% of the remainder, as well as in some patients with lesser degrees of weight reduction. Somewhat comparable are the results obtained by Osserman and Dolger [45] after weight reduction of obese diabetics with anoretic drugs. The improvement in tolerance tended to be correlated with the amount of weight lost. Reduction or discontinuance of the use of insulin also was possible more frequently for those losing most weight. A year after treatment was discontinued, those with further weight loss or smaller amounts of gain in weight were more frequently able to continue without insulin therapy or with smaller doses than patients with greater weight gains.

PRINCIPLES OF WEIGHT REDUCTION

The road to lasting weight reduction is likely to be thorny and difficult. Many, if not most patients, look for a quick and easy way to get rid of excess pounds. On the other hand, the physician may think all that the patient needs is a diet list, a few exhortations, and an occasional pep talk. Despite the abundance of easily accessible educational material on foods and food values, a surprisingly large number of people are still poorly informed about these matters. Many patients consider their overweight an inherited condition about which nothing can be done. Still others want to believe their condition is of endocrine origin. Sometimes obesity comes from overeating which satisfies psychological or emotional needs of the patient.

We shall not attempt to go into all the details of the management of the overweight patient. Here we would emphasize the attitude of the physician toward the problem and the broad principles which should guide the management of the patient. Each overweight person requires a special evaluation. Why the patient presents himself to the physician is significant. Does he come because he is convinced he needs to reduce? Is the overweight an incidental finding in a periodic health examination? Is there a medical problem, such as heart disease? Whatever the reason, the matter of motivation is crucial and will determine the success or failure of the regimen.

It is also important in the management of obesity, perhaps more so than in most other physical disorders, with the possible exception of alcoholism, that the physician understand the personality, the social habits, the intelligence, the will power, and capacity for self-discipline of the patient. This appraisal is necessary in order to plan a regimen which offers a reasonable chance of success.

First of all, a careful history and physical examination, utilizing appropriate laboratory tests, is required for every overweight patient who goes on a reducing program. This may disclose whether or not endocrine factors are actually involved. The examination provides the opportunity to explain the causes of overweight to the patient and to discover why he overeats. In this way the physician can find out whether emotional factors are implicated in the development of the patient's obesity.

Next, we would stress the importance of a careful dietary history. This should not be done too hastily. The patient is likely to gloss over or forget the amounts and types of food and drink consumed not only during meals but also between meals. This is a good opportunity to catch and point out certain errors or incorrect impressions the patient has about diet and foods.

One should develop in the patient a feeling of personal responsibility for success in weight reducing and do whatever one can help the patient's morale. A positive attitude and frequent expressions of continued interest in the patient's progress is important. Furthermore, since the progress even of the conscientious patient may sometimes be slow, the reasons for this need to be carefully explained to avoid discouragement.

The diet is, of course, of paramount importance in reducing. First of all, it should be as satisfying as it is possible to make it and yet be in conformity with the caloric restriction required. The patient, too, must be considered in relation to his family and his work.

However, prescribing a diet is not enough. The patient must learn the diet and the permissible substitutions. This means learning food values and above all not overlooking the caloric value of between meal snacks and beverages, such as beer, whiskey, and soft drinks. Furthermore, the diet needs to be checked regularly.

Obviously, the successful management of the obese patient is a time-consuming affair. However, there are ways of cutting down the time it takes by using various group techniques, by using the services of a dietician, or both. Many of these problems of diet can be handled by the class method.

What about drugs? We are in no position to be specific on this point. However, physicians who have had extensive experience in their use lean to the opinion that they have a relatively minor and temporary value in the great majority of cases. The important point about the use of drugs in weight-reduction therapy is that it should be discretionary, never routine. The physician should be aware of their limitations and not prescribe them simply as a way to help the patient feel that something is being done. With or without drugs, it is the patient's attitude and his under-

44. Newburgh, L. H.: Control of the Hyperglycemia of Obese "Diabetics" by Weight Reduction, Ann. Int. Med. 17:935 (Dec.) 1942.

45. Osserman, K. E., and Dolger, H.: Obesity in Diabetes: A Study of Therapy with Anorexigenic Drugs, Ann. Int. Med. 34:72 (Jan.) 1951.

standing of the realities of his problem which will produce lasting results. The fact he must accept is that he must permanently change his eating habits.

Exercise has a useful place if the patient clearly understands that it contributes little to weight reduction per se but that it serves other purposes, such as improved physical well-being and muscle tone. Otherwise, exercise may slow the patient's progress and, if overdone, may be harmful.

All of this indicates that helping the overweight patient to reduce is a real job for the physician and one which requires the application of the best that modern medicine has to offer, including new knowledge of nutrition and psychology. Beyond this, there are definite medical problems with individual patients which require skilled management. Unless the physician takes a serious interest in his overweight patients, they will continue to fall prey to the fads and fakes which have proved so profitable for charlatans.

PROGRAM ON WEIGHT CONTROL

The American Medical Association through its leadership in establishing the Chronic Disease Commission has clearly recognized the need for a more vigorous attack on the medical problems of the mature population, and obesity certainly qualifies as a major problem. Accordingly the Metropolitan Life Insurance Company, in cooperation with the American Medical Association and the Public Health Service of the Federal Security Agency, is this year undertaking a national weight-control campaign. The aim is threefold: (1) to recommend that weight control be carried out only under a physician's supervision, (2) to emphasize the advantages of normal weight and adequate diet, and (3) to stress the prevention of overweight.

The program will encourage community health agencies to include weight control as an important part of health education. As a tool to focus public attention on the problem and stimulate action, the Metropolitan Life Insurance Company, with the cooperation of the Public Health Service and the American Medical Association, has produced an entertaining, educational movie short called "Cheers for Chubby." This color film will be shown in theaters throughout the United States. A longer version called "Losing to Win" has been made for television showings and for later use in cooperation with community health agencies and other local groups.

A number of other national health agencies which have a logical interest in weight control, such as the American Diabetes Association and the American Heart Association, are making weight control an active part of their programs. The Metropolitan Life Insurance Company Field Force of 19,000 will participate by distributing educational literature on overweight in millions of American homes and by enlisting the aid of community groups. Many other persons and organizations interested in the subject, such as state and county medical societies, health departments, industrial organizations, and other voluntary agencies, will cooperate in the campaign. No effort should be spared to impress the American public with the importance of maintaining optimum weight. This appears to be the chief, if not the only practical, answer we have as yet to the question: What can be done to prevent or retard diseases of middle and later life?

SUMMARY AND CONCLUSIONS

Overweight is a real and major hindrance to the good health of adults, of whom at least one-fifth in our population are affected by it. Overweight shortens life, is an etiological factor in several principal diseases, and hastens their downward course. Particularly important is the relationship between the accumulation of excess weight and the development of cardiovascular disease, which already ranks far ahead of all other causes of death and yet accounts for an increasing part of the death toll with the passing years. There is clear evidence that hypertension and degeneration of the heart and blood vessels are much commoner in the obese than in others. More than eight out of 10 diabetics are overweight before the onset of their disease. The frequency and mortality from gallbladder disease and certain forms of cancer are higher among those overweight than among others. Certain forms of arthritis are commoner among them. Their mortality from cirrhosis of the liver and appendicitis is above normal. Obesity may adversely affect the outcome of childbearing and surgical procedures. It impairs the prognosis of persons with asthma, bronchitis, and many other conditions. Up to date evidence of the increased mortality of overweight persons is presented, based on a new study by the Metropolitan Life Insurance Company.

While a great deal has been written about weight reduction, factual material on the results, particularly over a long term, is scanty. It is known that only a minority of those overweight who start out on a weight-reducing program persist long enough to reap the maximum benefits. Indications are that these benefits are real and not imaginary, but there is much to be learned on this and many other aspects of weight reduction.

The approach to the job of weight control can be greatly improved. Prevention, as well as treatment, of overweight depends on the patient's persistence in eating a low-calory, nutritionally well-balanced diet. This is easier said than done because psychological and social factors are frequently involved. For success these must be recognized and dealt with. Weight control is and must be the patient's responsibility. It is the physician's job to educate the patient to accept this responsibility and to show him how to reach his objective.

The time has come for a comprehensive attack on obesity as a problem in public health. Physicians should take an active part, through their medical societies and other community health organizations, in educational efforts to inform the public of the dangers of overweight and the rational approach to lasting weight control. Increasing numbers of persons now live to the ages when obesity impairs their health and life expectancy. In the light of our present knowledge, weight control is a logical approach to the maintenance of health and the prevention of some of the major diseases of middle and later life.

1 Madison Ave.

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PRESENT STATUS OF OBESITY PROBLEM

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Obesity is one of the commonest physical abnormalities found in the general population. It shortens life, affects health, and impairs prognosis. It is indeed true that fat comes only from food, and those who wish to get rid of accumulated body fat must eat less than is required to meet the energy requirement of the body.[1]

Numerous investigators are not satisfied with this conception as a complete and final answer to the problem of obesity. Normally, there is a nice adjustment between appetite and caloric needs, and the body ordinarily maintains itself in a fairly constant state. Whatever the underlying cause of obesity is, in the last analysis it involves a disturbance in the normal relation of the appetite to the energy expenditure. The mechanism which determines appetite is a primary factor in the development of obesity. There is no satisfactory answer as to what determines appetite satisfaction, but, it probably depends on the interaction of a number of factors. The regulation of food intake is one of the most important physiological regulations. The essential characteristics of this regulation in the adult, its precision, sensitivity and accuracy, the individual and racial differences, the differences due to environmental factors as well as the alterations in metabolism and body composition correlated with these changes in food intake, have been studied by Mayer and his collaborators.[2] The importance of the integrity of the hypothalamic region of the brain, as well as the hyperphagia and resulting obesity due to the hypothalamic lesion, have been studied and reviewed by Brobeck.[3] In recent months evidence has been obtained by Mayer, Vitale, and Bates [4] on the changes in blood composition to which chemoreceptors situated in the hypothalamus might be sensitive. The chemoreceptors are sensitive to variations of the blood glucose level. Variations of the blood glucose level seem more important than absolute levels. Energy intake is so regulated that its basal level corresponds to a definite, small, but not negligible activity. If, everything else being constant, activity rises above this basal level, food intake will increase. If activity drops below the basal level, food intake will not decrease and fat will accumulate. This basal activity is limited both in duration and in intensity. If either of these increase to the point at which blood glucose is affected, food intake increases. Age is a factor in determining this basal activity level. Conditions may thus be created in which the chosen daily food intake no longer corresponds to the actual caloric requirements. For example, the desire for food may be abolished by judicious parenteral feeding of dextrose. Conversely, obesity may occur either because enforced immobility maintains activity below the basal level without any corresponding decrease in the food intake,[5] or because of lesions of the chemoreceptors, or because of aberrations in the carbohydrate metabolism which upset the glucostatic mechanism of control of the regulation of food intake. Corticotropin (ACTH) and cortisone, which give a tremendous stimulus to the appetite, may prove to be an important investigative agent in the study of the mechanism of the regulation of food intake.

It is well accepted that deranged cortical function manifesting itself in the form of psychical conflicts and nervous tension can lead to overeating and obesity. Hollander and Sober [6] have recently reported factual studies of the influence on appetite of psychical trauma. They studied appetite in a patient with complete esophageal obstruction and jejunostomy and concluded that there was evidence that appetite diminishes as nutritional intake increases, even when no food can enter the stomach. But this relation may be upset and even reversed by emotional disturbances. Excessive food intake may reflect family custom or conditioning. Certain persons derive great emotional satisfaction from the ingestion of food and may easily overindulge.

Most obese patients seek a reason other than overeating for their condition. Many, if not most patients, look for a quick and easy way to get rid of excess pounds. People should be warned of the epidemic of dietary fads and faddists which is always a problem. The tremendous following of these faddists, however, suggests that the public is vitally interested in obesity. It is the physician's responsibility to understand the proper management of obesity, to be sympathetic and interested in directing reducing measures for the patient seeking his council, and to teach the public that by control of their weight they can aid in the maintenance of health, extend life expectancy, and avoid the adverse influence obesity has on many impairments and diseases of middle and later life. The reason for the various quack remedies for obesity, with their ridiculous measures and unscientific diets that in many instances lead to definite harm to body tissue and health, can unquestionably be traced to the failure of the medical profession to give the subject serious consideration.

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MANAGEMENT OF OBESITY

Dietary management should never be attempted before a complete diagnostic examination has been made. It is important to understand the emotional and psychological background of each patient. Careful study should be made of the food and drink habits.

Two general procedures must be considered in the management of the obesity problem. The first is that of simple qualitative restriction for reduction of overweight of only a few pounds; one can ordinarily attain the desired weight by merely restricting intake of the obvious fats and the more concentrated carbohydrates. This may be done by following the list of typical foods allowed, and curtailing intake of those on the "to avoid" list in Table 1. The second is a quantitative procedure for cases of obesity requiring greater dietary restriction. The diet in these cases must be calculated for each individual problem and outlined in household measures and gram weights.

TABLE 1.—*Food List for Weight-Reduction Diet*

Typical Foods Allowed	Typical Foods to Avoid
Milk, skimmed, and buttermilk	Sugar and all sweets
Egg	Starches:
Meat, lean	Bread
Meats low in fat content:	Cereals
Chicken, lean portion	Macaroni
Liver	Spaghetti
Fish, other than salmon	Pastry, pie, cakes
Shrimp	Sweet desserts
Crab meat	Vegetables high in carbohydrate content:
Fruit, 5% and 10% sugar	Potato
Vegetables, 3% and 6% sugar	Shelled peas
Clear soup	Shelled beans
	Corn
	Parsnips
	Fats:
	Butter
	Salad oils
	Cream
	Meats high in fat content:
	Pork
	Lamb chop with large amounts of fat

Most obese patients needing more than a single qualitative restriction of food to reduce their weight can follow the calculated quantitative reduction diet by using the approximate household measures of food allowed in the menu. Such a diet presents no serious problem at home or in most restaurants.

When a diet is prescribed for the more resistant cases of obesity, it must be accurately weighed. Most patients needing such a procedure will be greatly aided by spending the first several weeks in the hospital, where they will be convinced that they can lose weight by following an individually prescribed, weighed diet. In addition, they can often join with other obese patients in classes in which by education they are made to understand that there is no other way to obtain lasting results except by overcoming faulty food habits and having sufficient motivation and will power to permit long, continued dietary restriction or dietary discretion after ideal weight has been attained. Eating a weighed diet day after day allows patients to be trained in the proper diet principles, so that they can eventually choose their quantitative menu qualitatively and approximate the weighed regimen within a few grams.

The benefits of group psychiatry in these classes for instruction on obesity problems demonstrate that people who have a problem in common get together and freely discuss it without fear of mockery. In doing so they are stimulated to compete with one another in accomplishing a common objective, while in each patient a feeling of material understanding and support develops.

IMPORTANT FACTORS IN DIETARY TREATMENT OF OVERWEIGHT

The important factors in prescribing quantatative reduction diets are secured by applying the following principles: the diet must be (1) low in calories, (2) relatively high in protein, (3) moderately low in carbohydrate, (4) very low in fat, (5) sufficient in bulk to satisfy hunger, and (6) adequate in vitamins and minerals.

Calories.—The caloric intake of the particular patient is the first thing to be considered, and of course it must be below his energy requirement. One should choose a caloric intake of from 800 to 1,500 calories per day, depending on the amount of overweight, the rate at which the patient desires to reduce, the expected and ideal weight desired, and whether there are any associated problems or complications. Eating too low a caloric intake is not a good procedure to follow routinely. It has a poor satiety value and produces lassitude and weakness. Failure to lose weight on a dietary prescription of 800 to 1,500 calories per day almost invariably means that the diet formula has been misunderstood or is not being followed.

Protein.—Almost every one agrees that the use of a relatively high protein allowance in any reduction regimen, using from 1 to 1½ gm. per kilogram of expected ideal weight, is most acceptable. This protects nitrogen equilibrium, prevents specific amino acid deficiencies, assists in maintaining a more constant blood sugar level, and increases satiety value due, in part at least, to the increased specific dynamic action of proteins and the facilitating of gluconeogenesis.

Carbohydrate.—The carbohydrate content of the reduction diet must be quite limited if much weight is to be lost, yet high enough to act as a protein sparer by protecting the antiketogenic fraction of the protein molecule from being transformed into available dextrose. In our plan of a reduction diet, my colleagues and I prescribe from 1 to 1½ gm. (never less than 0.85 gm.) of carbohydrate for each gram of protein in the diet. This amount is safely above the minimum requirement to preserve nitrogen balance.

Fat.—The fat intake must of necessity be very low because of the number of calories allowed in a reduction diet and the high caloric value of fat as compared with carbohydrate and protein. The purpose of the diet is to allow very little fat intake in order that the body may use up its own fatty tissues to make up the deficient caloric intake and meet the energy requirements.

Bulk.—The satiety value of the diet is very important. The diet should be planned so that the patient will not be hungry and at the same time will be able to carry on his normal activity. Liberal quantities of green vegetables should be prescribed so as to supply sufficient bulk and roughage to aid in bowel elimination and to satisfy hunger. Meat is one of the foods that has a particularly high satiety value. A small amount of fruit taken at the end

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of a meal aids a great deal in giving a sense of fullness and satisfaction. In addition, as much water, clear broth, vinegar, tea and coffee, and saccharin or cyclamate (sucaryl) sodium as desired is allowed.

Vitamins and Minerals.—Patients may be fat and overfed yet suffer malnutrition. In some obese patients on exceedingly high carbohydrate, low protein, low fat diets for a prolonged period evidences of malnutrition [7] may develop (vitamin B complex deficiency states) with the physical signs of cheilosis, paranasal seborrheic dermatitis, injected conjunctiva, photophobia, red tongue with glossitis, and atrophic papillae. High carbohydrate diets do not increase the total metabolism but increase the number of nonfat calories consumed and therefore increase the requirements for thiamine. Thiamine requirements are less on a diet rich in fat than on one containing much carbohydrate. Lowered carbohydrate intake, with good protein availability and high fat oxidation in the reducing process, all sparing the thiamine needs, causes disappearance of the deficiency state often without any added vitamin supplement. However, the use of water-soluble vitamin supplements hastens the recovery of an associated deficiency if it is present.

In Table 2 the nutritional needs of normal adults are compared, and an analysis of diets frequently used in the treatment of obesity is given. It is to be noted that reduction diets below 1,500 calories have some nutritional inadequacies. It is wise therefore to provide adequate supplements by prescribing one or two of the readily available multivitamins and mineral tablets.

TABLE 2.—*Comparison of Daily Nutritional Needs of Normal Adults and Analysis of Daily Diets Frequently Used in Treatment of Obesity*

Requirements for Normal Diets*	Carbohydrate (Gm.)	Protein (Gm.)	Fat (Gm.)	Calories	Calcium (Gm.)	Iron (Mg.)	Vitamin A (I.U.)	Thiamine (Mg.)	Riboflavin (Mg.)	Niacin (Mg.)	Vitamin C (Mg.)
Man (154 lb., 70 kg.)											
Sedentary	..	70	..	2,400	1.0	12.0	5,000	1.2	1.8	12.0	75.0
Physically active	..	70	..	3,000	1.0	12.0	5,000	1.5	1.8	15.0	75.0
Woman (123 lb., 56 kg.)											
Sedentary	..	60	..	2,000	1.0	12.0	5,000	1.0	1.5	10.0	70.0
Physically active	..	60	..	2,400	1.0	12.0	5,000	1.0	1.5	12.0	70.0
Approximate Composition † of Obesity Diets											
800 calories	60	70	30	790	0.8	11.0	1,672	0.7	1.8	7.0	62.0
1,000 calories	70	70	50	1,010	0.9	12.0	2,147	0.7	1.8	8.0	61.0
1,500 calories	85	85	60	1,220	1.0	15.0	2,833	0.8	2.0	10.0	76.0
1,500 calories	105	105	75	1,515	1.0	19.0	3,879	1.1	2.4	13.0	86.0

Note that an 800 calorie diet is inadequate in calcium, iron, vitamin A, thiamine, niacin, and vitamin C; a 1,000 calorie diet in calcium, vitamin A, thiamine, niacin, and vitamin C; a 1,200 calorie diet in vitamin A, thiamine, and niacin, and a 1,500 calorie diet in vitamin A. If a serving of carrots, spinach, or broccoli is taken every day, the supply of vitamin A will be most adequate.

* National Research Council recommended daily dietary allowance (1948 revised edition).

† Cooper, L.; Barber, E., and Mitchell, H.: Nutrition in Health and Disease, Philadelphia, J. B. Lippincott Company, ed. 11, Rev., 1950.

DIRECTION FOR CALCULATION OF QUANTITATIVE REDUCTION DIETS

The first step in calculating any reduction diet, using the above principles, is to decide on the expected or ideal weight of the patient at hand. The ideal weight of any individual patient is determined usually by consulting tables of actuarial standards,[8] the weight being chosen on the basis of height, age, and sex. These tables should serve as an approximate guide and should not be followed exactly. One must take into consideration each patient and use as a goal the best expected or ideal weight for his particular needs, both mental and physical. Regardless of what the ideal weight should be, the first reduction effort should seldom be calculated for a reduction of more than 20 to 40 lb. (9 to 18 kg.) below the present weight of the patient. For example, a 1,000 calorie diet (such as is outlined in Table 3) which is calculated on the basis of an expected or ideal weight attainment of about 154 lb. (70 kg.) may be prescribed to a patient weighing approximately 194 lb. (88 kg.). With a few subtractions from or additions to the 1,000 calorie diet (see bottom of Table 3), one can easily prescribe an 800, 1,200 or 1,500 calorie diet. During any reduction regimen, the patient should weigh only once a week, but on the same scales, at the same time of day, and before the breakfast meal. Weight loss in most instances should not exceed 1 to 2 lb. (0.5 to 0.9 kg.) per week after the first two or three weeks. When a reduction of from 20 to 40 lb. has been obtained, it is well to add enough food to any diet used so as to maintain the new weight for a period of from two to four months. This will allow the body to adjust its metabolism to this newly attained weight prior to further reduction, if necessary. The only exceptions to this rule are patients whose obesity for a certain definite reason requires very rapid reduction or patients with extreme obesity.

ACCESSORY FACTORS IN TREATMENT OF OBESITY

Exercise.—Exercise recommended as a means of increasing the energy expenditure usually increases the appetite even more. Passive exercise or body massage may sometimes be useful in improving body tone, but will not reduce weight.

Water Balance.—Water may be taken according to the patient's usual drinking habits. There is no reason to restrict water intake greatly unless the obesity is complicated by a disease which makes the limitation of water desirable. Some women with an active ovarian cycle retain water premenstrually and may show an actual gain in weight a few days before menstruation. Unless the cause is understood, this failure to lose weight may be discouraging to both patient and physician.

There is practically no advantage in restricting salt intake on a reduction regimen unless edema or excessive fluid retention is an associated complication. Shifts in salt

7. Barborka, C. J.: Treatment by Diet, ed. 5, Philadelphia, J. B. Lippincott Company, 1948.

8. Ideal Weights for Women. Metropolitan Life Insurance Stat. Bull. **23**:6 (Oct.) 1942; Ideal Weights for Men. ibid. **24**:6 (June) 1943.

and water metabolism with changes in atmospheric temperature and humidity often induce fluctuations in body weight from day to day.

One of the causes of failure in the treatment of many patients with obesity has been their lack of courage and perseverance in following a restricted regimen long enough to overcome the tendency of the tissues to retain water to compensate for the fat oxidized. It is known that occasionally although a patient is on a reduction diet and is actually oxidizing tissue the scale will not show a loss and will even show a gain for days because water is being retained to replace the fat burned. After this diuresis takes place spontaneously, and there is rapid loss in weight.[9] This step-like fashion of reduction has been observed by both laymen and physicians.

TABLE 3.—*Daily Reduction Diet for Expected or Ideal Weight of 154 Pounds*

Suggested Distribution of Total Food Allowances per Day (1,000 Calories, 70 Gm. of Carbohydrate, 70 Gm. of Protein, and 50 Gm. of Fat)

		Gm.
Breakfast		
Fruits, fresh, or juice	1 serving (½ cup)	100
Bacon	1 slice, crisp	5
Egg	1	50
Bread	1 thin slice	20
Butter	2 level teaspoons	10
Milk (skimmed)	1 glass (6½ oz.)	200
Beverage (coffee or tea)		
Luncheon		
Meat, cottage cheese, or eggs	1 small serving lean meat, or ½ cup cottage cheese, or 2 eggs	60
Vegetable, 9% sugar (Group II)	1 small serving (¼ cup)	50
Butter	1 level teaspoon	5
Fruit	1 small serving (¼ cup)	50
Milk (skimmed)	1 glass (6½ oz.)	200
Dinner		
Meat, fish, or poultry	1 large serving, lean	90
Vegetable, 3% sugar (Group I)	1 small serving (½ cup)	75
Salad, 3% sugar (Group I)	1 small serving (½ cup)	75
Butter	1 level teaspoon	5
Fruit	1 serving (½ cup)	100
Milk (skimmed)	1 glass (6½ oz.)	200
For 800 calorie diet subtract from above menu:	1 strip bacon	5
	½ slice bread	10
	3 level teaspoons butter	15
	1 small serving fruit	50
For 1,200 calorie diet add to 1,000 calorie menu:	2 oz. meat	60
	1 small serving vegetable, 3% sugar	75
	1 small serving vegetable, 9% sugar	50
	1 small serving fruit	50
For 1,500 calorie diet add to 1,200 calorie menu:	1 egg	50
	1 oz. meat	30
	1 serving vegetable, 3% sugar	100
	1 small potato	50
	2 level teaspoons butter	10
	80 cc. skimmed milk	80

Vegetables and Fruits to Include in Reduction Diets

Group I (No More than 3% Sugar):

Asparagus	Chard	Parsley	Tomato juice
Beet greens	Chicory	Radishes	Tomatoes
Broccoli	Cucumber	Romaine	Turnip greens
Cabbage	Endive	Sauerkraut	Water cress
Cauliflower	Escarole	Spinach	
Celery	Lettuce	Squash, summer	
Celery cabbage	Mushrooms	Squash, Zucchini	

Group II (No More than 9% Sugar):

Artichokes	Beets	Kohlrabi	Pumpkin
Beans, green string	Brussels sprouts	Leeks	Rutabaga
Beans, yellow wax	Carrots	Okra	Squash, winter
	Eggplant	Onions	Turnips
	Kale	Peppers	

Fruits:

Apples	Grapefruit	Melons:	Pear
Applesauce	Grapefruit juice	Cantaloupe	Pineapple
Apricots	Grapes	Casaba	Pineapple juice
Blackberries	Guava	Honeydew	Plums
Blueberries	Lemons	Watermelon	Quince
Cherries	Limes	Orange	Raspberries
Cranberries	Loganberries	Orange juice	Rhubarb
Currants	Nectarines	Papaya	Strawberries
Gooseberries		Peach	Tangerine

Thyroid Medication.—While endocrine factors in patients with obesity cannot be completely disregarded, obesity explainable solely on the basis of endocrine dysfunction is exceedingly rare. The use of endocrine products, with the exception of thyroid preparations, has no place or value in the treatment of obesity. Physicians cannot be too strongly cautioned against the promiscuous and indiscriminate use of thyroid medication in the treatment of obesity, especially by the laity. The use of thyroid extract in the treatment of obesity outside the well-controlled advice of a physician is pernicious. Unfortunately, in the minds of many physicians, as well as patients, the term hypometabolism is synonymous with hypothyroidism. This readily leads to confusion and to the unwise and unwarranted administration of thyroid extract.

Appetite Depressants.—A variety of substances such as amphetamine sulfate (benzedrine® sulfate) and several similar drugs have been advocated as a means of reducing the patient's appetite. There is no doubt this objective is frequently attained but often at the price of irritability and insomnia. Many patients are so upset by the use of these drugs that they prefer not to continue taking them. Even if no disturbing symptoms occur, the drugs cannot be taken indefinitely. At best they simply act as a crutch and sometimes a harmful one. An extensive literature has accumulated on the use of the sympathomimetic amines in the treatment of obesity.[10] (The use of *d*-amphetamine (dexedrine®) sulfate appears to have fewer undesirable side effects. The dosage is 5 to 10 mg. daily, usually divided into at least two, and sometimes three, doses.) These drugs are never given after late afternoon for they may cause sleeplessness. They may also cause transient and minor increases in the blood pressure and basal metabolic rate and are not suitable for elderly people or for those with cardiovascular or cerebral disease. Unfortunately, these drugs gradually lose their effectiveness after prolonged use, but after a rest period of several weeks their efficacy may be restored. In any case, the restriction of the caloric intake is far more important than any form of drug therapy in the management of obesity.

SUMMARY

Though it is true that fat comes only from food and that obesity results from eating more than is required to meet the energy requirements of the body, many investigators are not satisfied with this conception as the complete and final answer to the problem of obesity. New experimental work, seeking a better explanation of the mechanism of the regulation of food intake and intermediary metabolism in the obese, is in progress. It is the physician's responsibility to give the patient with obesity proper consideration, warn the public about weight-reduction fads and faddists, and point out that obesity has an adverse effect on longevity and predis-

9. Newburgh, L. H., and Johnston, M. W.: Obesity, M. Clin. North America **27**: 327, 1943.

10. Harris, S. C.; Ivy, A. C., and Searle, L. M.: Mechanism of Amphetamine-Induced Loss of Weight: A Consideration of the Theory of Hunger and Appetite, J. A. M. A. **134**: 1468 (Aug. 23) 1947.

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poses persons to secondary pathological states, particularly in middle and later life. The management of obesity can be attempted in two ways: (1) either by simple qualitative restrictions or (2) by a quantitative procedure using a low calorie, relatively high protein, moderately low carbohydrate, and low fat diet with sufficient bulk in it to satisfy hunger and adequately supported by vitamins and minerals. Such a reduction diet, following the important factors prescribed, reduces the obese patient and does not provoke hunger, lassitude, or weakness. When definite restrictions are advisable, the patient should know that the calculated diet, though restricted, has definite quantitative proportions formulated to protect his health; therefore, he should eat all of the diet that is prescribed and not attempt to eat less with the idea he will do better—yet unwittingly do worse. The education of each patient in the various food and beverage values and the allowable substitutions, the understanding of accessory factors when occasionally used, and the follow-up care after ideal weight has been obtained are just as vital to success in the management of obesity as they are in the management of diabetes or in healing and preventing recurrences of peptic ulcer.

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PSYCHIATRIC TREATMENT IN GENERAL HOSPITALS

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In his recent book, "The Neuroses," [1] Walter C. Alvarez lists among the triumphs of modern medicine ever more thorough examinations, safer and more brilliant surgery, better-trained practitioners, and finer hospitals. "All of us are getting ever more skilled at finding *organic* disease," while we are still having difficulty "in recognizing and treating the neuroses and psychoses," he states. Nor is this a difficulty of the poorly trained or equipped physician: "The city consultant has as much trouble as the country doctor—perhaps more." [1]

This well-pointed criticism of modern medicine by one of its most experienced practitioners is, even so, understated. We should face realistically the errors in modern practice to which one of us (A. E. B.) has elsewhere called attention.[2] Psychiatric indications in therapy are so frequently ignored in everyday practice as to cast grave discredit on our professional standing. Cultism flourishes largely from this neglect. A high percentage of patients finally become critical because psychiatric approaches to their problems were consistently ignored. Ignorance and prejudice continue to dominate our thinking and prevent our facing the extreme prevalence of mental illness. Basically the fault is failure of medical education to integrate psychiatry into general medicine. Discrimination against mental patients in general hospitals worsens the problem. The obvious and great need for better integration of psychiatry within medicine, plus frequent inquiries for help in establishing departments, led us to survey all facilities within general hospitals in North America.

The need has been long standing for complete, accurate information about existing psychiatric-treatment facilities within general hospitals. The partial surveys made by the American Medical, Psychiatric, and Hospital associations and by the United States Public Health Committees have not given a complete up-to-date picture.

One of us (A. E. B.) has since 1924 carried out all clinical treatment within general hospitals and developed four psychiatric units in four different hospitals.[3] Articles describing these experiences brought frequent requests from other psychiatric practitioners and ancillary workers for information of all kinds, much of which we could not give, and for advice about planning, staffing, and operating psychiatric units within general hospitals. The present project began with our effort to meet these inquiries. From this three-year study of existing and planned departments within United States and Canada we have summarized the more essential data. A preliminary report was made in the Scientific Exhibit at the 1950 American Medical Association Meeting. Expansion of this report is herein presented.[4] More publications will follow, with the intention of incorporating all information in book form.

SURVEY

Methodology of Survey.—After counseling advice from the American College of Surgeons, American Hospital Association, and others, two types of questionnaires were sent to hospital administrators and interested physicians: (1) A detailed questionnaire for all hospitals believed to have a psychiatric department and (2) a short questionnaire for all registered hospitals with 75 or more beds classified as general by the American Medical Association. Appropriate queries were later sent to medical schools and voluntary health insurance plans. Repeated queries brought data on 97% of the hospitals with units, however small. In case of failure to respond,

From the Herrick Memorial Hospital and the A. E. Bennett Neuropsychiatric Research Foundation.

Read before the Section on Nervous and Mental Diseases at the One Hundredth Annual Session of the American Medical Association, Atlantic City, June 13, 1951.

1. Alvarez, W. C.: The Neuroses: Diagnosis and Management of Functional Disorders and Minor Psychoses, Philadelphia, W. B. Saunders Company, 1951.

2. Bennett, A. E.: Faulty Management of Psychiatric Syndromes Simulating Organic Disease, J. A. M. A. **130**: 1203-1208 (April 27) 1946.

3. Bennett, A. E.: Professional and Staff Problems in Operating Psychiatric Units, South. Hosp. (No. 1) **16**: 24 (Jan.) 1948.

4. Bennett, A. E., and Engle, B.: Psychiatric Treatment in General Hospitals in the United States and Canada, Scientific Exhibit Before the Section on Nervous and Mental Diseases, Ninety-Ninth Annual Meeting of the American Medical Association, San Francisco, June, 1950. Bennett, A. E.; Hargrove, E. A., and Engle, B.: Psychiatric Treatment in General Hospitals in the United States and Canada, Scientific Exhibit Before the Section on Nervous and Mental Diseases, One Hundredth Annual Meeting of the American Medical Association, Atlantic City, June, 1951.

information was obtained through interested psychiatric colleagues, members of the American Psychiatric Association Committee cooperating with lay groups, and such other sources as the Veterans Administration Central Office and mental health organizations.

Data Gathered on General Hospital Psychiatric Departments.—The three-year survey shows existing and planned psychiatric facilities in United States and Canadian general hospitals, both private and governmental. Of the 328 United States general hospitals reported by any source to offer psychiatric service, however limited, information was obtained on 317 (97%). These were classified into five divisions, according to services offered (see Table 1).

Bed Ratio.—The actual percentage of beds allocated for psychiatric patient care was compared with the general hospital population. Since the percentage proved to be small, as compared to the need, we have also attempted to estimate the future requirements. At the same time we have outlined minimal requirements for effective psychiatric treatment in all general hospitals—both inpatient and outpatient services.

TABLE 1.—*General Hospitals Classified as to Psychiatric Services*

		No. Beds	Psychiatric Beds
	United States *		
Class I.....	205—at least 15-bed unit, full service	139,555	20,950
Class II.....	73—partial service	23,424	2,078
Class III.....	38—mainly detention	18,320	499
	Total	181,299	23,527
Class IV.....	24—under construction, not open		
Class V.....	98—all classes planning expansion		
	Canada		
Class I.....	15—full service	9,521	423
Class II.....	6—some service	2,825	86
	Total	12,346	509

* 317 of some 330 general hospitals (97%) with psychiatric services were classed.

The 279 United States hospitals in Classes I and II have 23,028 psychiatric beds out of a total of 162,979 beds, or 14%, and 24 of the Class I to III hospitals are expanding facilities. The over-all figures, however, are not encouraging. Out of 574,683 total beds, the 4,761 United States general hospitals provide only 24,000 beds for psychiatric patients—that is, only 4% of all general hospital beds are used for psychiatric treatment. These beds accommodate only 1% of all mental patients, according to United States Public Health Service estimates. This is a strange situation, when emotional disturbances account for at least 25% of all admissions to general hospitals, and mentally ill patients actually fill more than 50% of all hospital beds.

It is significant that over 60% of general hospitals with psychiatric services are governmental, while less than 40% are private. Private general hospitals have thus evaded their duty in adequate patient care, while governmental hospitals by their nature have been forced at least to accept these patients. The 21 Canadian general hospitals in Classes I and II have 509 psychiatric beds out of a total of 12,346, or 4%; 9 of these are planning expansion.

5. MacDonald, N. F.: Psychiatric Ward for the General Hospital for Diagnostic Service and Short Term Care, Division of Hospital Facilities, Federal Security Agency, United States Public Health Service, 1947-1948.
6. Haun, P. Psychiatric Sections In General Hospitals, New York, F. W. Dodge Corp., 1950.

Of some 1,600 United States general hospitals without psychiatric service, 950 (60%) replied—an excellent proportion for a single mailing of the questionnaire. Of these a third may admit psychiatric patients briefly for emergency or speedy diagnosis, and a sixth may, under special conditions, give some treatment in mild cases.

TABLE 2.—*Psychiatric Service in General Hospitals Without Psychiatric Units*

1,000 General Hospitals of 1,600 in United States
- ⅓ admit psychiatric patients for emergency or diagnosis
- ⅙ give some treatment in mild cases
- ½ never admit a known psychiatric patient
- ⅓ have outpatient clinics

60 General Hospitals of 175 in Canada
- ⅔ admit psychiatric patients for diagnosis, limited treatment
- ⅓ never admit a known psychiatric patient

Of the 950 hospitals, 400 reported outpatient psychiatric clinics or psychiatric consultation service. At least half of the 950, however, offer no service of any kind and never admit a known psychiatric patient.

Of 175 Canadian general hospitals without psychiatric beds, 60 (34%) replied. While 42 may admit psychiatric patients briefly, 18 never admit these patients.

Our survey does not describe in detail the physical facilities of psychiatric units. Those interested in architectural and other technical features can refer to the United States Public Health Service leaflets [5] on unit plans and to Paul Haun's book "Psychiatric Sections in General Hospitals." [6] Both from wide personal experience and first-hand acquaintance with successful units, we have found that an adequate 25-bed psychiatric department can be housed in an ordinary hospital wing without prohibitive remodeling costs. Sections for men and women need not be separate. Semiprivate rooms and small wards, better than private rooms, aid in group adjustments. Some space is essential for day rooms, dining, occupational, and recreational areas, with special interview, treatment, nursing, and laboratory rooms. One sound-proof, air-conditioned seclusion room is needed for every 15 to 20 patients. A combination of open and closed departments with areas for daytime

TABLE 3.—*Adequate 25-Bed Psychiatric Unit*

Physical Facilities
- Any wing or section, physically equipped, with semiprivate rooms
- Day, dining, occupational-recreational rooms (sexes mixed)
- Nurse station, interview, treatment, and laboratory space
- Sound-proof and air-conditioned seclusion room for every 15 to 20 patients
- Combined open-closed unit with daytime patient service (ideal plan)

Minimum Personnel
- 1 psychiatric nurse supervisor
- 1 graduate psychiatric nurse
- 1 assistant nurse or 2 senior students
- 2 aids (1 man and 1 woman)

} each 8-hour shift

- 2 psychiatric residents
- 1 intern
- 1 clinical psychologist
- 1 psychiatric social worker
- 1 occupational-recreational therapist

patients is an ideal arrangement. This 25-bed department, headed by a psychiatric nurse supervisor, can function with such minimum personnel as one graduate psychiatric nurse, an assistant nurse or two senior student nurses, and two aids (a man and woman) for each eight-hour shift. Other needed personnel are an occupational and recreational therapist along with a part-time psychologist and a psychiatric social worker. Two psychiatric residents and one intern assist the psychiatrists

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and receive their graduate training. Proof that 20- or 25-bed units operate profitably is our first three-years' experience at Herrick Memorial Hospital in Berkeley, Calif. The remodeling cost for the psychiatric section was $35,000. At the end of three years the 24-bed unit is being expanded to 30 beds; remodeling costs have been returned, and a substantial profit shown in addition.

Important as physical facilities are, they are secondary to adequate, well-trained personnel. A closely knit, cooperative, trained staff can compensate for imperfect physical plants. Obtaining competent personnel is of major importance in operating a psychiatric department. For example, 14 psychiatric units now physically ready are unable to function because of lack of personnel, and 10 units are operating with woefully inadequate personnel. About 4,000 Veteran Administration beds are unavailable for patients because of lack of trained personnel, and the Veterans Administration is still building hospitals. A Louisiana hospital has only one full-time and one attending psychiatrist, four psychiatric nurses, and no residents or interns to cover 72 psychiatric beds. Some of this shortage is due to requirements of the armed forces, but part is due to deficient training programs.

TABLE 4.—*Personnel of General Hospitals with Psychiatric Facilities*

United States *	
Full-time psychiatrists	539
Part-time psychiatrists	1,421
Psychiatric residents	664
Interns	173
Psychiatric nurses	2,066
Canada †	
Full-time psychiatrists	20
Part-time psychiatrists	77
Psychiatric nurses	123

* 317 hospitals.
† 21 hospitals.

With little added expense existing hospital programs can double the number of trained personnel. At present 309 of the 317 general hospitals are training 664 psychiatric residents and 2,066 psychiatric nurses. Only 40 general hospitals affiliated with medical schools, however, train residents and psychiatric nurses. Of the total 7,483 internships, only 173 provide rotation through psychiatric departments.

The 21 Canadian general hospitals were training 17 psychiatric residents; only 4 general hospitals with medical schools have training programs for psychiatric residents and nurses.

Evaluation of the psychiatric unit in a general hospital was requested from administrators. Some believe psychiatric departments undesirable because of the problem of disturbed patients; one administrator expressed fear that "suicidal and homicidal dangers are always imminent, and noisy patients are the cause of complaints." Others objected to tie-up of beds by patients found to need protracted care or observation or begrudged beds to the mentally ill that could be used for medical or surgical patients. Some surmised that psychiatric departments would not pay their way. However, the great majority of those with experience stressed the great advantages. Representative is the comment of a California administrator, "Our psychiatric department is performing a distinct service in the hospital and community. Every department in the entire hospital, including the nursing staff, has become more aware of psychiatric problems. The department always runs at capacity and has more than paid its cost of operation." A Florida hospital director wrote, "This is the first such unit in central Florida and at last provides a place to care for psychotic patients who otherwise have to be put in the county jail."

Medical-School Use of General Hospital Psychiatry.—The use of general hospitals for teaching psychiatry in medical schools was likewise studied. Increasing appreciation of the role of emotional factors in many illnesses has made the general hospital the proper, necessary place in which to teach psychiatry and conduct research. Here medical students, young doctors, and nurses see psychiatry in its proper perspective as they learn the importance of emotions in causing or contributing to many illnesses besides the frank psychoneurotic or psychotic disorders. Mistakes in handling these problems and expensive delays cost patients time, money, and organs. Errors are common enough to gravely discredit medical acumen, and their fundamental cause is failure to emphasize psychiatric aspects in medical education. It is not rare since World War II to find medical students with a better psychiatric background than some faculty members have. These students appreciate emotional illnesses and causative emotional factors which the staff physician has overlooked. Greater use of general hospitals by medical schools for teaching psychiatry is a step in the right direction.

TABLE 5.—*Medical-School Psychiatric Education*

Use of General Hospitals for Teaching Psychiatry	
73 4-yr. schools:	52 have general-hospital psychiatry
	17 have none
	4 no reply
Years in Which Psychiatry Taught to Undergraduates	
All 4	22 schools
3rd and 4th	20 schools
Only 1	7 schools
2nd and 4th or 2nd and 3rd	3 schools
Other Departments Used in Teaching Psychiatry	
All departments	9 schools
Medicine only	11 schools
Medicine plus 1 or more departments	23 schools
No other departments used	7 schools
Postgraduate Training	
Only ⅓ of medical schools have accredited program for residents and nurses	
Undergraduate Training	
¾ of medical schools use ward walks, seminars, and case presentation as teaching methods	
Treatment	
¾ (49) schools	full psychiatric treatment service
¼ (17) schools	partial treatment service
9/10 (67) schools	outpatient clinics
2 schools	consultant service only
Research	
Only 42 medical schools have a psychiatric research program; ¾ using general-hospital psychiatry have research projects	

Specifically, of 73 four-year medical schools in the United States, 52 use general hospitals for psychiatric teaching, training, and research, 17 do not, and 4 did not reply. Of the 52 schools, 49 have full psychiatric-treatment service in general hospitals, 23 have accredited training programs for residents and nurses, and 42 have research projects. The general hospital is fitted variously into the teaching program by way of seminars, ward walks, and individual teaching. Only nine schools used all clinical departments for teaching psychiatry to medical students. Half the schools stressed psychiatric aspects of pediatric, obstetric, gynecologic, and surgical pa-

tients, and three-fourths integrated psychiatry into internal medicine. Two medical schools, Bowman Gray for one, include special study of geriatric problems within general-hospital psychiatry. A new unit of 10 beds is being installed at Graylyn Hospital for study and treatment of mild geriatric disorders. It is significant that some of the best research studies have come from psychiatric units which could use departments of pathology, x-ray, and other facilities readily available in a general hospital.

Of 10 four-year Canadian medical schools, 7 use general hospitals for teaching psychiatry, 2 do not, and 1 did not reply. Of the seven schools, six have full psychiatric treatment service, and four have accredited programs for residents and nurses.

Voluntary Health-Insurance Plan.—Growing dependence on prepaid health-insurance plans and increasing hospital costs present difficulties in care of the mentally ill in general hospitals. A partial solution is for voluntary health-insurance plans to include treatment of nervous and mental diseases. Many health-insurance companies are not aware that modern treatment of numerous emotional ills by combined physiological and psychological means is no longer an interminable or long drawn-out procedure. For example, certain psychoses remit under four to six weeks' therapy, and severe psychosomatic disorders can be immeasurably helped with four to six weeks' intensive regimen and psychotherapy. Exclusion of mental illness is thus based on old, incorrect ideas. Most health-insurance plans now discriminate against the treatment of emotional illnesses. Only 10% of 115 Blue Cross and 4% of 23 Blue Shield plans, two important voluntary health-insurance groups, give the same regular benefits for psychiatric as for other medical disorders. Thirty per cent of these plans limit coverage as to days, benefits, or dollar maximum, while more than 50% completely exclude all psychiatric illnesses.

TABLE 6.—*Voluntary Health-Insurance Plans Covering Nervous and Mental Diseases*

Blue Cross Plans in 115 United States Cities	
52 (45%)	mental illness totally excluded
11 (9%)	regular benefits, same as medical
52 (45%)	impose limitations of days, benefits, or dollar maximum
Examples	
Milwaukee	21 days at $3.00 a day in special institution
Toledo	covered only until diagnosis
Albuquerque	10 days care during life of insured person
Blue Shield Plans in 23 United States Cities *	
20	exclude nervous or mental disorders
2	cover neurological diseases only
1	10 days, general hospital only, after 1 yr.

* Other private insurance company, group clinic, industrial, and lay sponsored plans not yet analyzed.

All psychiatrists constantly see patients admitted for extensive diagnostic survey or for treatment of nonexistent organic disease who are primarily patients with emotional disturbances. In an earlier paper [2] we reviewed in detail 150 of 500 patients with emotional disturbances admitted under various diagnoses of serious organic disease. The 811 different therapeutic procedures included 244 surgical operations. This mistaken treatment is costly to the patient and to the health-insurance plans. Recently we made a back-door approach to this problem. We reviewed 500 records of patients covered by voluntary health insurance and admitted consecutively to a general hospital in 1950 in an attempt to learn how many patients with emotional disturbances were mistakenly treated for organic disorders and the cost of these mistakes to the insurance plans. Ten per cent of these patients' records showed definite emotional illnesses treated as organic disturbances, and another 5% had minimum organic findings and needed psychiatric evaluation. The diagnosis of "menopausal syndrome," for example, disguised a full-blown involutional melancholia in a patient treated, without relief, by dilatation and curettage, for which the insurance plan paid $130.00. The diagnosis of chronic appendicitis often covered frank conversion hysterias. Hemorrhoidectomy was done to relieve cases of anxiety or depression. Such surgical and medical procedures attempting to treat somatic symptoms were frequent. For example, colitis was treated purely as a physical symptom, with complete neglect of psychic tension states. The histories of these patients showed no medical appreciation of the role of emotional factors. Such faulty procedures in this small group cost the insurance plans a total of $5,400. To have properly treated at the start the actual causative emotional factors would have been an etiological therapeutic approach and would not have increased the cost.

Future Needs.—The increasing integration of psychiatry within medicine makes care of the mentally ill in a general hospital mandatory. The Commission on Hospital Care has emphasized that general hospitals should provide facilities and personnel for treatment of mental patients not needing long-term care.[7] From our clinical experience and extensive study, we should like to state as minimal psychiatric needs in general hospitals the following: 60,000 beds for psychiatric patients in at least 1,600 general hospitals and mental-health clinics in at least 3,500 general hospitals. Ten per cent of the beds for psychiatric patients is a minimum need. Every community of 100,000 can support a psychiatric unit and a mental-health clinic within a general hospital. Smaller cities can maintain a successful psychiatric unit, as witness Ogden, Utah, a town of 40,000 which has a 20-bed unit, already notable for its definite service to the community, operating at full capacity in a 200-bed hospital.

Since emotional factors account for 25 to 50% of illnesses, every general hospital must offer some psychiatric service. Hospitals with less than 100 beds can provide psychiatric diagnosis and consultation; those with 100 to 200 beds need small units or unassigned beds for psychiatric care plus an outpatient clinic for early detection and treatment of mild cases. Every hospital with more than 200 beds must have a complete psychiatric department of 15 or more beds and an outpatient service. In view of the increasing number of aged persons, geriatric departments in general hospitals should give some psychiatric treatment and help prevent the widespread dumping of senile patients on state hospitals.

7. Commission on Hospital Care: Hospital Care in the United States: A Study of the Function of the General Hospital, Its Role in the Care of all Types of Illness, and the Conduct of Activities Related to Patient Service, with Recommendations for Its Extension and Integration for More Adequate Care of the American Public, London, New York, Commonwealth Fund, 1947.

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SUMMARY

Present psychiatric facilities in general hospitals are extremely inadequate. Only 279 of 4,761 United States general hospitals offer any kind of adequate inpatient psychiatric service. Although 50% of all hospital beds are now used for treatment of chronic mental illnesses, yet general hospitals provide only 4% of beds for acute psychiatric disorders. Psychiatric personnel is far below the number needed for minimum functioning. Training programs are insufficient to meet the demands, as witness 14 completed units unable to operate for lack of personnel. Medical schools do not make sufficient use of general hospitals for the psychiatric teaching, training, treatment, and research from which both institutions mutually benefit. Only 52 of the 73 medical schools use them, and only 9 use all clinical hospital departments for the integration of psychiatry. Voluntary health-insurance coverage of psychiatric disorders is disgracefully lacking. Only 10% of Blue Cross and 5% of Blue Shield plans studied provide the same benefits for psychiatric as for other medical disorders. The rest discriminate as to days, benefits, or dollar maximums. Half of the plans examined completely exclude psychiatric problems.

CONCLUSIONS

In view of these severe deficiencies the following urgent recommendations are made in order to hasten the complete integration of psychiatry into general medicine: Individual psychiatrists and their local and national organizations have shown too little interest in this problem. They must participate more in medical meetings and community-health projects. Psychiatry has too long been isolated from general medicine. Other medical practitioners, hospital administrators, and trustees of general hospitals, because of ignorance and prejudice, have aided in the unfair, unrealistic discrimination against mental illness. Medicine has been unprogressive in this regard. Mental-health organizations and other lay groups have led the way in promoting acceptance of psychiatry within the local community and general hospitals. The Veterans Administration through necessity has had to apportion 30% of their general hospital beds to neuropsychiatric services.

The use of general hospitals integrates psychiatry into medicine, breaks down isolation, prejudice, and ignorance, and educates and benefits the community through early treatment of mental illnesses. Universal acceptance of psychiatry within general hospitals would finally come to grips with our number one national-health problem —chronic mental illness—by training much needed personnel, automatically raising standards of diagnosis and treatment, encouraging earlier and better care, overcoming the asylum concept of psychiatry, and finally relieving the overcrowding of state hospitals.

Approximately one-third of 2,000 to 2,500 private practicing psychiatrists have no hospital affiliation for treatment purposes, and this number is increasing several hundred yearly through board certifications. The restriction to office practice, together with the increasing public demand for psychiatric service, greatly handicaps both patient and physician. General hospitals are the only logical institutions which can remedy this situation by providing psychiatric facilities for all certified psychiatrists.

Special committees from the American Medical, Psychiatric, and Hospital associations should combine to provide all general hospitals with accurate over-all information. Booklets should outline methods of expanding facilities for training of personnel. The universal requirement of affiliate psychiatric-nursing training and some psychiatric experience in internships would greatly improve the quality of general and specialized medicine and nursing. It would also encourage many to enter the psychiatric field, thereby relieving the scarcity of trained workers.

Inspection and rating boards should arrange for general-hospital psychiatric departments and state hospitals to interchange residents and psychiatric nurses in training. This exchange allows the medical worker to become fully acquainted with all types and degrees of mental illness and improves care in both acute and chronic stages.

Nonpsychiatric practitioners with access to psychiatric units in general hospitals find such provision for care of psychiatric problems extremely satisfactory. They continue to see the patient and to conduct his medical or surgical treatment along with that of the psychiatrist's. Physicians who appreciate these advantages should feel it their duty to advocate them to medical colleagues, to hospital administrators, and to others in authority. These opinions often carry more weight than do those of psychiatrists.

All physicians should cooperate in inducing health-insurance plans to accept the responsibility for treatment of all acute illnesses, including psychiatric ones. Full hospital medical benefits for at least four weeks have proved to relieve the serious financial burden of psychiatric treatment and to encourage wider use of general hospitals. This change alone would greatly improve public satisfaction with medicine, benefit public health, increase manpower productiveness, reduce the chronicity of mental illness, save needless expenses, and help preserve the private practice of medicine.

General hospitals in the future that accept their full community responsibility will include psychiatric services. They will provide a minimum of 60,000 beds for psychiatric patients in at least 1,600 general hospitals, with mental-health clinics in at least 3,500 general hospitals. An awakening of the general medical and hospital-administrative professions to this challenge can accomplish the goal in a decade.

2000 Dwight Way.

Freedom of Education.—Freedom of education is the foundation upon which all other freedoms are erected, for education shapes the processes of thought. Thinking cannot remain unfettered if its sources and the methods of its teaching are controlled by the Federal Government. Local self-government in education and local responsibility for its support are two of the most priceless of American heritages and are the key to the maintenance of our system of government.—J. S. Speed, M.D., Federal Subsidization of Medical Education, *Journal of Bone and Joint Surgery*, July, 1951.

PRACTICAL PROBLEMS IN AVIATION MEDICINE

Brigadier General Edward J. Kendricks (MC), U. S. A. F.

Problems of aviation medicine, like those of military medicine (indeed, all phases of medicine), are practical because they deal with human life. The practice of aviation medicine is a specialty which concerns itself with the maintenance and improvement of health, safety, and efficiency of flying personnel.

Aviation medicine is usually considered under two broad headings. The first heading may be broadly described as clinical aviation medicine and is that phase of military medicine practiced by the flight surgeon—both in high echelon planning duties and with units in the field, on the carrier, or at the air base. This clinical phase brings to our flyers knowledge of their equipment, methods of flight safety, and an awareness of the human factors in flight, all of which are derived from the second broad field of aviation medicine, namely, aeromedical research.

Aeromedical research actually begins when an aircraft is born as an idea on the drawing board. Research continues through the flight-test and service-test stages until and after the plane becomes operational. During the course of the development of the aircraft on its long path from a drawing to a full-scale physical article, there must be parallel research in the fields of aeromedicine to evaluate the capabilities of the crew, as well as the development of personal equipment to adapt these limited capabilities to the new aircraft environment as developed by the engineer. Aeromedical research includes many professional fields—such as clinical medicine, physiology, psychology, biology, and physics—as well as mechanical, electrical, material, and chemical engineering. Our research team, then, includes physicians as well as scientists and engineers.

Research in aviation medicine centers around those problems introduced by the major environmental factors imposed by aerial flight, namely, those of high altitude, speed, and temperature. Aerial survival and flight safety introduce a fourth broad field of aeromedical research. These four major areas, of course, may be subdivided many times and into many fields of research.

Problems confronting the flight surgeon in his practice of aviation medicine may be roughly divided into the following: (1) the selection of flying personnel, (2) medical training and indoctrination in the factors associated with high altitude and high speed, (3) care of the flyer under operational conditions, (4) care of patients during air evacuation, and (5) last but of vital importance, care of the sick and wounded. Practice of clinical medicine and surgery in the Air Force is essentially no different from that in any other military service or in any hazardous civilian occupation.

PROBLEMS CONNECTED WITH THE B-36

Of special interest are a few practical problems of aviation medicine that have arisen in the course of the development of a key aircraft, the B-36. The first full-scale mock-up of the B-36 was held in the spring of 1943 at Ft. Worth, Texas. At this mock-up our medical service was represented by the Aero Medical Laboratory, Wright Field. There, for the first time, we were able to introduce the human requirements in the design of this aircraft for future pilot effectiveness and comfort. As will be seen later, the medical members at this mock-up failed to anticipate all the future problems arising in the operation of this aircraft, since in the spring of 1943 our flight surgeons had not acquired the broad operational experience which was to come with the operation of the B-17 and the B-24 over Europe and Asia.

In 1945 the first engineering inspection of the original flight-test model of the B-36 was held at Ft. Worth. However, because combat flights at that time were of approximately 12 to 14 hours' duration and operational altitudes were never above 30,000 ft. (9,000 m.) and because our research effort at the time was directed to maintaining and improving current operations in the Asiatic theater, the members of this inspection team failed to include those changes necessary for the use of this aircraft as we see it today.

Operation of the B-36 has far exceeded our technical know-how in World War II and has introduced the possibility of missions of 30 to 40 hours' duration, in comparison with our previous experience of 14 hours, and operation at altitudes of 40,000 ft. (12,000 m.) and above, as compared with previous operational ceilings of 30,000 ft. This increase in performance has imposed many new requirements and duties on our aircrews in order to fulfill all the necessary functions for piloting, for keeping 10 engines operating simultaneously for world-wide navigation, for aerial gunnery, and for accurate bombing. An aircraft of this size is indeed expensive, and a flight of these aircraft represents a considerable part of our national industrial effort. Therefore, aircrew safety, as well as the safety and survival of the aircraft under all conditions of operation, becomes an increasingly important new factor.

Altitude.—The B-36 is a pressurized aircraft, and, if there were no hazards of combat and if the aeronautical engineer had performed his mission with complete success, there would be no problem arising from high altitude. However, experience with the B-29 has shown that pressure-cabin aircraft are definitely vulnerable in combat as far as loss of cabin pressurization is concerned. In our experience the blisters and windows of the B-29 and many commercial aircraft have proved that the aeronautical engineer is still fallible. Any loss of cabin pressurization above 30,000 ft. will expose the aircrew immediately to the hazards of decompression sickness; above 40,000 ft. we know this hazard to be extremely serious. Although loss of cabin pressurization will not endanger the flying characteristics of the aircraft, a single case of decompression sickness among its crew members—especially a key member, such as the pilot, engineer, or navigator—will severely endanger the entire aircrew's effectiveness and safety. It may force the commander

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of the aircraft to lower his flight altitude to levels where decompression sickness may be relieved, that is, below 25,000 ft. (7,500 m.). At these lower altitudes the chance of interception and dangers from antiaircraft fire will greatly increase. Therefore, the most significant medical, research, and operational problem involved in high-altitude flight is how to maintain aircrews at altitudes of 40,000 ft. for extended periods of time after cabin pressure is lost. This is in reality a pioneer field for research.

Although much research was accomplished in the field of decompression sickness during World War II, we have currently little practical knowledge with which to work today. The one single factor known to be effective in reducing the incidence of decompression sickness is preoxygenation. The practical problem facing the flight surgeon caring for B-36 aircrews is how the ship's oxygen system can be used effectively to denitrogenate aircrews before they reach the target area and decrease the incidence of decompression sickness in case of loss of cabin pressurization. If there is loss of cabin pressurization, what mechanical means can be used, such as a pressure capsule, to bring individual crew members to simulated altitudes below 25,000 ft.?

Operation at 40,000 ft. under depressurized conditions also introduces the problem of proper use of oxygen equipment. Every flyer at his station must be checked during flight at routine intervals. An aircraft flying in the depressurized condition will simultaneously have lost its heating and air-conditioning system, and the immediate problem arises of caring for the aircrew under conditions of severe cold. This introduces the problem of availability of insulated clothing to care for the crew during the emergency. Design of this clothing must provide for the mimimum of interference with aircrew capability in handling controls and performing their major duties.

Increased Duration of Flight.—Another factor, that of increased duration of flight, has introduced many problems in the operation of bomber aircraft never fully anticipated and appreciated before. The first and obvious problem is the need for crew relief. Crews must have facilities for rest and sleep during flight. A second problem is the need for in-flight feeding. An average 30-to-40-hour mission requires a minimum of three in-flight meals. The conventional box lunch with sandwiches and fruit has proved quite inadequate. Hot meals are required. The quality of in-flight meals is of utmost importance since gastrointestinal disturbances during aerial flight can cause extreme discomfort.

A third and extremely important problem is that of sanitation. When one realizes that the average excreta per person is approximately 2 qt. (2,000 cc.) per 24-hour day and when one realizes that the crews of these aircraft number as many as 15, one will realize the problem of disposing of up to 12 to 15 gal. (48,000 to 60,000 cc.) of human excreta. The chemical toilet as now used in our commercial aircrafts has totally failed to meet this requirement. I mention this as a field in which a great deal of engineering study needs to be done.

Escape from Aircraft.—Another problem is introduced by the need for escape from the aircraft in case it is totally disabled. The training of aircrews in the necessary oxygen procedures for bailing out from 40,000 ft. is a primary duty of the flight surgeon. Each aircrewman must be fully informed on the proper use of his emergency oxygen bottle, on the importance of insulated clothing, on the use of a long free fall period to avoid the high parachute-opening shock normally expected at 40,000 ft., on how to handle himself during the free fall period, and on when to release his parachute. He must be advised on jump technique to avoid personal injury. He must also be briefed on the problems of survival on terrain unfriendly either by nature or due to the enemy. The flight surgeon must therefore be fully acquainted with the problems of survival under conditions of extreme cold, extreme heat, and on water.

Premission Care.—There is another aspect of B-36 operations of which very few people are aware. In the 24-hour period before a mission, many man hours are spent in care of the mechanical equipment of the aircraft. The engines, armament, and bombs are given exacting care and attention. All must be in perfect operational condition at the time of the take-off. However, in the general eagerness for perfection there is a tendency to forget the pilot and his crew, on whose shoulders falls the responsibility of the ultimate effectiveness of the aircraft once air-borne and over the target area. It therefore becomes essential for the flight surgeon to control the activities of aircrews before these B-36 missions of long duration so that the members are not physically tired before the mission is initiated. The flight surgeon must exert premission control of sleep, food, and aircrew activities to reduce and possibly prevent the onset of fatigue during these long missions.

Fatigue.—Finally, a few comments should be made on fatigue as it occurs in aerial missions. Fatigue is a word that has been too loosely used in the past. There is known essentially four types of fatigue—physiological fatigue, psychological fatigue, physical fatigue, and psychiatric fatigue. Physiological fatigue occurs as a result of anoxia, extremes of heat and cold, or motion sickness. Psychological fatigue is often the result of poorly designed flight controls and instruments; it causes misinterpretation of flight-instrument readings, landing and take-off failures, and so on. Physical fatigue is associated with poor health, lack of sleep, hunger, and lack of comfort in the aircraft. Psychiatric fatigue results from a fear for one's survival while flying over snow, water, jungle, desert, or enemy territory; from fear of the aircraft, fear that all engineering factors are not completely resolved; from fear of flight conditions, such as imposed by weather or high altitude, or from fear of combat.

It is the function of the flight surgeon to reduce physiological fatigue during missions by encouraging proper use of the personal equipment. Psychological fatigue can be reduced by the proper human engineering of controls, instruments, dials, and equipment. Physical fatigue, as pointed out previously, can be relieved by proper care of the health of the crews, by proper preflight control of sleep and nutrition, and by the introduction of comfort in aircraft. Fear for survival can be relieved by proper indoctrination and good equipment. Fear of the aircraft and fear of weather can be avoided by proper training of aircrews.

There are three factors which compensate for fatigue under all conditions. First, there is incentive to complete

the mission to gain possible decoration and prestige; second, there is motivation, that is, a desire to fight for ideals, and, last but not least, there is the desire to live.

CONCLUSION

This short paper has pointed out that the problems of aviation medicine and the flight surgeon enter into many fields of science and engineering, particularly in connection with the long-range bombardment aircraft. Each new type of airplane, such as the B-47 now in production, has a character of its own and will require the flight surgeon to establish new criteria and new procedures for safe, effective operation of these aircraft. In order to answer the many problems that occur with the use of every new kind of aircraft, our laboratories must have a sound research program that can anticipate requirements a minimum of five years in advance.

Office of Surgeon General, U. S. A. F., Washington, D. C.

AIR EVACUATION

Brigadier General Wilford F. Hall, Medical Corps
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World War II brought about the first large scale use of aircraft for the movement of patients. The scale is apparent by the following statistics, which cover all patient movements both within and between all war zones:

1943	173,000
1944	545,000
1945	624,000

These figures might be interpreted as indicating that the airplane was the primary method the military used in moving patients during the periods covered. Actually, this was not the case except in certain instances, and in certain sectors of fighting. Air evacuation was really a supplemental and emergency measure, whereas the surface means was the primary and major method used. As an example, the greatest number of patients from overseas returned to the United States in any one month during the war was in August, 1945. During that month 47,200 were debarked from ships, and 8,800 from airplanes.

Following the cessation of World War II hostilities, the Army, of which the Air Force was then a part, continued to rely primarily on surface means for patient movements—the Navy depended primarily on airplanes.

ADVANTAGES OF AIR EVACUATION

After the establishment of the Air Force as a separate service, and the unification of the three services into a Department of National Defense, the three Surgeons General recommended to the Director of National Defense that air evacuation be established as the primary means of patient movement. The Joint Chiefs of Staff placed this into effect in December, 1949. Hospital ships were assigned the role of floating hospitals—not hospital transports. The responsibility for this worldwide air evacuation was given to the Military Air Transport Service, which came into being on June 1, 1948, as an Air Force command operationally unified with the Navy, replacing the old Air Transport Command (ATC) and the Naval Air Transport Service (NATS). The decision of the Joint Chiefs of Staff followed thorough study of the question which, among other things, revealed the following information:

1. To transport patients on surface vessels takes 21 times more medical personnel than the number required to transport the same number of patients by air.

2. The services of a medical corps officer are rarely required in air evacuation. This is because of the short time involved in flight.

3. Trips via aircraft have great advantage in speed, flexibility, and frequency. The DC-4 type 4-engine Douglas aircraft travels approximately 10 times as fast as a surface hospital ship, requires only 26 to 32 patients instead of 300 to make up a full load, and may be directed in any direction over land and water.

4. Due to the increase in trip frequency and movements in smaller increments, the requirement for embarkation and debarkation hospital beds is decreased by over 50%.

5. Long delays are eliminated in getting patients to definitive treatment centers.

The outbreak of the Korean Conflict (June 25, 1950) gave us the first test of this aerial "life line" under war time conditions.

Prior to the Korean action, the monthly patient load from Japan to the United States was about 300 per month. The air evacuation load from Japan to the United States since the Korean action is reflected in the following figures:

June, 1950	278	December, 1950	6,352
July, 1950	535	January, 1951	2,224
August, 1950	1,378	February, 1951	2,007
September, 1950	3,244	March, 1951	2,251
October, 1950	2,521	April, 1951	1,876
November, 1950	1,792		

It will be noted that the peak load was in December, 1950, a reflection of the fighting in Korea during late October and November. One day in December we returned 448 patients from Japan to the United States. We could have handled more if it had been required.

AIR EVACUATION SYSTEM

The air evacuation system can be broadly divided into two phases: first, the movement of patients from overseas points to the United States; and second, the distribution of the patients to hospitals within the United States.

Since all three services follow the general policy of sending patients to the military hospitals closest to their homes, the distribution problem within the United States

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The Air Surgeon, Military Air Transport Service.

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is the more complicated and requires a fleet of aircraft assigned to this mission full time, as the movements are in every direction. The movement of patient from overseas areas to the United States is easier to accomplish, and the more efficient, since the logistic aerial support of of a foreign theater automatically generates adequate air evacuation space back to the United States—the evacuation of patients homeward uses space generated by military cargo lift outward, and is thus an extra cargo dividend. Essentially, our only additional expenditure in this movement is for flight nurses and hospital corpsmen to make up the medical teams for the flights. We estimate that in any future foreign war, as has been the case in the Korean conflict, all military patients can be returned to the United States using less than half of the returning transport air space.

ROUTES

To accomplish our mission within the United States, we have found that the most efficient system is to fly a transcontinental U-shaped route from Westover AF Base, Springfield, Mass., to Washington, D. C., to Mobile, Ala., to San Antonio, Texas, to Denver, to Travis AF Base near San Francisco. This route connects the aerial debarkation port for the Atlantic (Westover) with the port for the Caribbean (Mobile) and the port for the Pacific and Alaskan areas (Travis) and serves the greatest number of large hospitals of the Army, Navy, and Air Force. Four-engine transports fly this route on regular schedule in both directions with a frequency depending on the workload. In addition, "feeder" squadrons of two-engine transport planes are located at strategic points along this route (Westover, Mobile, San Antonio, and Travis) to feed into and out of these locations and to accomplish missions between other points. All of these planes have been especially reconstructed for patient comfort.

The routes used across the Pacific all converge into Hawaii, where all patients are debarked and remain at least overnight in Tripler Army Hospital. Patients coming from the Philippines, Okinawa, and Guam come back through the central Pacific route of Guam, Kwajalein to Hawaii, whereas those coming from Japan fly a direct route to Hawaii via Midway Island.

The Boeing Stratocruiser (C-97), which has a pressurized cabin and carries a normal load of 60 patients, is able to overfly Midway Island and to make the flight from Japan to Hawaii nonstop in about 13 hours during the fall, winter, and early spring months when tailwinds are favorable at altitude.

CHANGES IN THE MILITARY PLANNING FACTOR

The adoption of air evacuation by the services has to a large extent changed the military medical planning factor of miles to that of hours. This places hospitals far-removed from a fighting front, measured in miles, close by, measured in time, which is the most important consideration in patient treatment. Fixed, permanently established hospitals far-removed from the combat zone have many advantages over hospitals under tentage or otherwise improvised located in a combat zone.

The airplane has provided us with the essential worldwide means of bringing the patient to the doctor. We are thus able to furnish specialized medical care to our troops stationed throughout the world—many located in small, isolated places. All military bases of appreciable size have at least one doctor assigned This doctor must by necessity be a general practitioner, but many cases will arise where the services of a specialist, or where the combined advantages of a large, fully staffed, well-equipped hospital may be desired or required. It is one thing to have the finest of medical talent and institutional services available, but quite another to be able to furnish these assets to all military troops deployed on a global scale. The military transport plane has bridged this gap—it has indirectly provided a complete staff of specialists and specialized medical services to all our bases, no matter how small, or wherever located.

COMMENT

With a requirement for the deployment of our military forces on a global scale, the air ambulance is a potent factor and a modern piece of our medical armamentarium for providing better medical care to all by fewer military physicians.

No amount of planning will ever actually forecast all outbreaks of fighting, the exact number of casualties, or the exact patient evacuation requirements. Two courses of action may be followed in medical planning. The first is to plan for the worst and to have too much too soon, thus being ready for any eventuality. This course is demoralizing to the highly trained medical personnel, who consequently are not all busily engaged in their specialties until the peak load planned for is reached. It may also result in a shortage of medical coverage for certain civilian sections of our country. The second course is to plan for an average workload to meet the forecasted situation, with the capabilities and means at hand to supply medical support in the form of personnel and matériel, quickly, and to evacuate the excess casualties from the combat zone or zone of communications all the way to the United States, if necessary.

Air transportation has made this second course possible and feasible. This course can be followed and was followed in the Korean conflict. When the hospitals in Japan began to reach peak occupancy and to overflow, air evacuation was on hand to carry the excess patients away quickly, comfortably, and safely to the United States and into the hands of waiting doctors, nurses, and well-established medical institutions.

Air evacuation has a profound influence on morale of our combat troops. A good soldier is a better soldier when he knows that if wounded he will be picked up promptly, treated by the best trained physicians of any country in the world, and evacuated out of the combat zone and even into the United States, close to his family and friends—all within a matter of hours, if his wounds warrant.

Air evacuation can quickly meet an unforeseen, immediate need for the movement of patients. Our experience has shown that less than half the returning air transport space from a foreign theatre is required for the return of casualties during routine combat operations. Thus, when needed, the normal air evacuation load can be more than doubled immediately; increased air transportation can be supplied in almost the time it takes a plane to fly to the theater. Prior to the Korean conflict our aerial tonnage from the United States to Japan was 70 tons a month. This tonnage was immediately in-

creased upward because of the pressing need for all sorts of war matériel and personnel. The 70 aerial tons per month went up to 110 aerial tons per day—an increase of almost 5,000%. With essentially all of the return space of these aircraft available for the return of patients, we automatically had several times the amount of air ambulance space that was needed to return all the casualties selected for evacuation to the homeland.

The value of being able to start definitive treatment early in casualties cannot be overemphasized. It can be said that air evacuation, while not in itself a method of treatment, acts as a catalyst, for it sharply cuts the time needed to move a patient to the hospital for definitive care and, therefore, speeds up the initiation of the entire healing process.

The mortality rate of our wounded in Korea has been less than half that of World War II. The Surgeon General of the United States Army has stated, "It is my sincere belief that a major factor in contributing to the excellent care our wounded men are receiving in the Korean Campaign has been the rapid and effective, efficient air evacuation of those wounded."

Major General Harry G. Armstrong, the Surgeon General of the United States Air Force, has said that the time saved through evacuation of the wounded by air constitutes the greatest purely military advance ever made in the handling of American battle casualties.

CONCLUSION

The air evacuation airplane will play an increasingly important role in military planning operations and successes. Its great speed and ability to support sudden and unforeseen military air evacuation requirements on a global scale are essential, and unmatched by surface means. It has proved, under actual war conditions, that it can meet patient transportation requirements quickly, safely, and with major contribution to lowering mortality rates. It is indispensable and a military medical requirement.

Andrews Air Force Base, Washington, D. C.

MAN AND THE SUBMARINE

Captain Thomas L. Willmon (MC), U.S.N.

Submarines have always been front page news, attributable in part to our inherent desire for vicariously experiencing danger. After a rare submarine loss the man in the street, in empathy with the submarine's crew and stimulated by flamboyant journalism, enlarges the story to imagine an unending downward plunging into the cold unknown of the ocean's depths, anticipating vague early crackles followed by crushing bedlam as steel plate wrinkles and crumples under millions of tons of sea water. But if in the man in the submarine such preoccupations should develop, he is finished as a submariner. He is properly conscious of the power and danger of friendly deep water, but his realization of the crew's reliability and his ship's integrity creates a confidence which only anxiety can disturb.

We now stand anticipating the appearance of an atomic-powered submarine, which climaxes many years of submarine development, failures, tragedies, and successes. If the atomic submarine is successful, its power, speed, endurance, and maneuverability will exceed any but the wildest fantasies. In lieu of the present diesel and electric propulsion will be substituted a shielded nuclear reactor to produce heat, transferred as steam to a turbine type propulsive unit. Much is yet to reach approved design, and many problems remain to be solved; but the first atomic submarine is well beyond the drawing board. The majority of information quite properly is secret.

The greatest chance of detecting a submerged submarine is through sonar listening. The atomic submarine is expected to emit less telltale sound than present boats; but more importantly, its speed, maneuverability, and endurance give untold advantages, especially since the pursuing antisubmarine vessel at other than slow speed is unable effectively to employ its sonar gear. The atomic submarine running submerged at high speeds, without reference to the limitation of battery charge or without exposure to enemy eyes or radar, will further approach undetectability.

Prospects are inescapable that a future chief function of submarines will be that of killing enemy submarines. Actually, two especially designed killer submarines were launched recently. Submarine versus submarine is analogous to blindfolding two armed enemies, each intent on killing the other; the one who makes the more and consistent noise is likely to be torpedoed. In such encounters the atomic submarine would have considerable advantage.

In the event of immediate hostilities, however, the modified submarine of the past war would defend our shores and shipping, ravage enemy commerce and navies, and even perhaps launch guided missiles on enemy objectives.

This submarine proved to be a reliable and outstanding weapon of war; the Guppy and Snorkel modifications have greatly increased its potential. About 240 submarines completed over 1,500 war patrols, sinking enemy vessels totalling 5,325,000 tons—more than all other agencies of our armed forces combined—with a total combat loss of 46.

The first submarine of the Navy was the Holland, commissioned in 1900 and retired in 1910. It was 53 ft. long, carried a crew of five, and could cruise submerged for about an hour. The Pickerel, a Guppy-Snorkel, last year cruised submerged 505 hours from Hong Kong to Pearl Harbor, a distance of 5,200 miles.

The present submarine is cigar-shaped, the length of a football field, divided into water-tight compartments, and propelled on the surface by diesel electric drive and while submerged by electric motors powered by storage

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batteries. Contrary to common belief, only a negligible increase in atmospheric pressure occurs in the submarine during a normal dive. In the Guppy (an abbreviation of greater underwater propulsion) and the Snorkel modifications, the superstructure is stripped, housed, and streamlined. More storage battery is added for Guppy power.

In order to prolong submerged running beyond the submarine's battery capacity, the snorkel or breathing device was developed, enabling diesel-engine propulsion while submerged at periscope depth. A valve in the top of the snorkel intake tube closes on contact with water, following which the pressure in the submarine decreases rapidly until the top of the snorkel again emerges and allows atmospheric air to flow into the ship. In a heavy sea or if depth control were not maintained with skill, there would occur a continuous and disturbing fluctuation of pressure. The degree of fluctuation is limited to a pressure equal to that at about 7,000 feet altitude. The speed of pressure change approaches the rate of climb and dive of jet aircraft. Except in emergency, the large pressure increases are retarded to reduce hazard to tympanic membranes and sinus cavities.

Submarine personnel are preselected for their ability to equalize pressure fluctuations in the middle ear and if indicated are treated with radon to shrink lymphoid tissue about the eustachian tube ostia. Currently, snorkel-induced difficulty is minimal. However, full evaluation of the effect of prolonged snorkelling must await war experience.

Habitability on long patrols in the current submarine is tolerable; in the submarine of the future the problems cannot but be more stringent. The present submarine normally does not submerge longer than 14 hours, by the end of which time the atmosphere requires revitalization. The tendency in the past war when a submarine was forced and held down was to save carbon dioxide absorbent and replenishment oxygen "for the next time when things might really be bad." Obviously this was a dangerous practice in that undetected deterioration of judgment was likely to intervene. The atomic-powered submarine is expected to be capable of remaining submerged and under way indefinitely and to be equipped to manufacture and control its atmosphere. Efforts are in progress to develop apparatus for carbon dioxide absorption without depletion of the absorbent.

The literature is not informative as to the maximum allowable carbon dioxide concentration which can be breathed for an indefinite time. There is excellent evidence that a 3% concentration of carbon dioxide breathed over a period of days induces a vegetative state in man and endocrine gland deterioration in guinea pigs. Perhaps, however, there is a lesser concentration which does not lead to physical or mental impairment. Since space is a submarine's most critical component, this is significant in that the weight and mass of carbon dioxide removal equipment can be reduced perhaps to a small fraction of its calculated size.

The diesel-oil olfactory trademark of submariners smells clean and is not objectionable, at least to the submariners. However, the closure of the submarine (housing 80 men for 12 to 18 hours) plus the aroma from oils, cooking, damp clothing, tobacco smoke, augmented by the inevitable odor from the ship's sanitary tanks results in a heavy atmosphere. The most effective deodorant and the only substance found to remove odors is activated charcoal, currently employed in filters installed on the sanitary-tank vents. Odor control in the submarine of the future is expected to be a more difficult problem.

Submarines are and must be built compactly. Build them larger to include more creature-comfort space, and they become more vulnerable, less maneuverable, and require more personnel to man them. It is axiomatic that the consistent and prolonged effectiveness of the crew of a submarine or any other unit is a direct reflection of the state of morale of the group, and morale is a product of many components, the environment being not least. Nevertheless, it must be accepted that the men serve the submarine; the submarine is not for the men. The division of space between the men and the machine must continue to be a compromise favoring the machine.

We may best understand personnel problems associated with submarine operations by visualizing the conditions under which the crews of submarines lived and fought during the last war. John Nicholas Brown, former Assistant Secretary of the Navy for Air, expressed interest that men are found to serve in submarines who "have the aggressiveness to fight them and the spirituality to live within them." It was a life of extreme monotony with an undercurrent of continuous tension and intermittent periods of fevered excitement during enemy contact. A mission might continue for 60 days without incident; these were the most devastating to morale and temper. Crowding was continuous and excessive, awake or asleep.

Temperatures of 125 F. with a relative humidity of 90% have been reported when air conditioning was shut down for silent running during enemy contact. Water was consistently in short supply so that bathing was limited. Once the submarine was under way, no one was allowed topside except the six officers and men on watch. Dawn to dusk submergence was often necessary, resulting in the men seeing no daylight for weeks. Recreation was severely limited.

No better example can be found of group living; there is no place for a man to isolate himself. Idiosyncrasies or intolerances are unacceptable. There is probably no situation paralleling the control and influence of the commanding officer of a submarine. Crucial decisions are his alone, frequently without time for collaboration with subordinates or consideration of alternatives. His decision may determine immediate success or failure, life or death. This close and unequaled dependence of the submarine and its crew has resulted in many obvious and heartening instances of the skipper becoming the "father substitute" of his men.

Despite the tension and anxiety-producing conditions under which submariners lived and fought, there was a remarkably small incidence of psychiatric casualties. From 1,520 war-patrol reports of submarines, each having a crew averaging 80, a total of about 126,000 man patrols may be considered. From this number reports of 56 psychiatric casualties are available, which is an amazing percentage of 0.00044 occurring per man patrol.

This relative absence of psychiatric casualties is believed due in large part to a strenuous and conscientious submarine personnel-selection program, which was begun early in the war in the Medical Research Laboratory, New London, and has continued to the present. The program has profited throughout from the research being carried on in New London and from other activities of the Navy and the sister services.

It is mandatory that submarine personnel be selected not only for their physical condition but also for intelligence and aptitude, special sensory perception, emotional maturity and stability, and freedom from psychopathic tendencies. The representative submariner is a person who is average or above in mentality and education, is strong, healthy, and well adjusted emotionally and temperamentally to himself and to his fellows, and *wants* submarine duty.

Reasonably accurate measurements may be taken of the physical and educational status of candidates; the temperamental, emotional, and psychiatric evaluations are more difficult to determine and more subject to error. A judgment about these factors is attempted on the basis of a written personality-inventory test, used only as a screening measure; by means of an intimate, personal psychiatric interview, conducted by a medical officer trained in submarines, and by the emotional reaction of the candidate during submarine-escape training. The final recommendation of the interviewing medical officer is influenced by the searching question: Do I want to go to sea with this man in a submarine?

The strength of the Submarine Force depends on three factors: (1) its personnel; (2) its standard of training, which is reflected largely by the stature of its personnel, and (3) the excellence of its material. The personnel-evaluation program has had a large hand in the first two factors in protecting and strengthening the Submarine Force. Man and the submarine can form a formidable team but can never be a weapon stronger than the weaker of the two. There has never been a submarine superior to those we now operate and are building. With the history of great success which has been ours and the knowledge of our machine superiority, the ever present danger of ignoring man becomes even greater, tempting us to forget that efficient and effective machines depend on men—efficient, effective, reliable men. A great mistake is to prepare for future war in terms of the past one, but it is equally erroneous to forget the lessons of the last one.

The submarine of the future is an unknown as regards the full potentiality of the weapon and the stress, impact, and demands to be made on her crew. There is no reason to believe that the stress, monotony, and anxiety will be less, that physical demands and need for emotional stability will be decreased, or that lesser degrees of skill, aptitude, and reliability than during the last war can be acceptable. Indeed, there is little doubt that higher physical, mental, and emotional standards will be required to derive the anticipated effectiveness from the new weapon. Even now it is not enough that men be examined physically and emotionally as candidates for submarine duty; they must be observed critically yet unobtrusively throughout their career and at times of opportunity fully reappraised as to continued suitability for a service which can not countenance even a single serious error of judgment, physical failure, or lapse of reliability. It is not chance that an organization attains success; it is consistently the result of planned and persistent effort stressing personnel, training, materiel, and *esprit de corps.*

Submarine Base, New London, Conn.

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EARLY DIAGNOSIS OF EMOTIONALLY CONDITIONED ILLNESS

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In the past decade or so, as a result of a somewhat revolutionary coordination of medical and psychiatric investigation, a vastly improved understanding of the relationship between the emotional reactions and physiological functions of the body has been achieved. It is now generally accepted that disturbances in the emotional life of an individual may be frequent and important factors in the development and progress of bodily disease, manifested not only in physiological, but also in structural, alterations. Comprehensive studies of such diseases have made available to the clinician simpler, more realistic, and successful means of dealing with them diagnostically and therapeutically. A growing recognition of the widespread prevalence of emotionally conditioned illnesses and a realization of the devastating effects of psychosomatic invalidism have made it clear to every physician that the emotional causes for disease must be given the same conscientious consideration as other etiological agents.

The diagnosis of emotionally conditioned illness depends on a large number of subjective and objective observations which at times are unmistakable but which, on other occasions, are sufficiently subtle to challenge even the especially skilled diagnostician. In the presence of certain specific diseases, such as essential hypertension, peptic ulcer, migraine, bronchial asthma, and ulcerative colitis, an evaluation of the emotional status of the patient has become routine. Of the less clear-cut entities, the most readily recognized psychosomatic illnesses are those which have existed for some time and which present well established psychoneurotic patterns. Frequently, erroneous diagnoses and inappropriate therapy have contributed to the chronicity and severity of the emotional and somatic symptoms. A large number of patients in such a condition, because of the ultimate refractory nature of their psychoneurotic mechanisms, become very difficult, if not impossible, psychotherapeutic problems. Often, the assistance of a psychiatrist is necessary for their proper management.

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From the standpoint of the internist or general practitioner, the earlier and less complicated psychosomatic problems are easier to deal with and respond more readily and more successfully to psychotherapy. However, they are often more difficult to diagnose because the nature of the presenting symptoms is not readily apparent. Obvious manifestations of neurotic ideation or behavior may not exist. There need not be a multiplicity of complaints. A patient may present a history of fairly clear-cut somatic symptoms of varying severity and be quite unaware of any feelings of excessive anxiety, tension, or emotional instability. The symptoms may be acute, subacute, or chronic, depending upon the nature of the illness and the precipitating emotional disturbance. There may or may not be supporting physical signs. Laboratory data, if abnormal, are usually sufficiently equivocal to confuse the differential diagnosis. In the majority of such cases, the correct diagnosis is made as a result of an evaluation of the nature and significance of the presenting symptoms in terms of the physiological changes which they reflect, and an elucidation of the underlying causal emotional disorder suggested by their presence.

Three hundred patients suffering from relatively early psychosomatic illnesses have been studied to determine the common and important somatic symptoms which correlated closely with the development of their emotional disorder, symptoms which by their very presence might suggest the possibility of an underlying emotional disorder. Often, they were the first indications of a change in the state of the patient's health. In some instances they were the reasons for seeking medical attention; in others, they were secondary complaints. All of these patients had thorough physical examinations and on no occasion was the influence of existing organic disease minimized.

The most common symptoms encountered in this group were weakness, asthenia, and easy fatigability. These occurred singly or in combination in 68% of the cases. Progressive weakness, debilitation, and increasingly rapid fatigue as a result of physical effort portend anemia of any origin and chronic diseases of many types. When emotionally conditioned, these symptoms are inconsistent in their relationship to exertion and difficult to explain physiologically. They characteristically appear in association with periods of emotional stress and relate more closely to what is demanded of a patient or to his emotional reaction to a situation than to the physical energy which he expends. Clinically, they may be expressed in several patterns. The patient may be "too tired to do anything" or "worn out all the time." Or, he may suffer recurrent, sudden episodes of weakness, often accompanied with giddiness, "blacking out," mental confusion, palpitation, respiratory difficulty, paresthesias, sweating, or trembling. Emotionally induced hyperventilation is a frequent mechanism for the production of such episodes. They may be hysterically conditioned or they may be due to spontaneous hypoglycemia. Especially characteristic is asthenia which is present upon arising in the morning. Gradually, during the day, this subsides so that by evening an acceptable state of well-being is experienced. Such patients complain, "I get up feeling all in and am more tired than when I went to bed. It takes me several hours to get going." When investigated further, it becomes evident that these patients find the problems of the day unpleasant and anxiety-provoking, and they hesitate to contemplate them. But as the anticipated threats pass, they seem to acquire an added sense of security and confidence which permits a reduction in their tension and apprehension.

In general, the psychosomatic patient who is tired or weak is so because he is tense, disinterested, bored, unwilling, or frustrated in obtaining his goals. Such patients need assistance in resolving their emotional problems, rather than the frequently administered treatment for a "mild anemia," a vitamin deficiency, or the menopause.

Persistent insomnia was present in 57% of the patients. In the absence of pain, dyspnea, orthopnea, or other demonstrable bodily discomfort, it is a manifestation of emotional difficulty, and it often is the earliest manifestation. It may reflect the presence of unresolved conflicts, anxiety, or a depression. Occasionally associated with the sleeplessness are such symptoms at itching or unpleasant sensations of the skin, sweating, muscle cramping, and the so-called "restless legs" syndrome.

Gastrointestinal symptoms commonly accompany emotional disturbances. The psychodynamics of obesity, peptic ulcer, cardiospasm, nervous vomiting, the irritable bowel syndrome, anorexia nervosa, and ulcerative colitis have been well documented. In mild and less clear-cut gastrointestinal somatization reactions, changes in the eating habits of an individual may be important early symptoms. The significance of some of these in neoplastic and other chronic disease syndromes must, of course, be considered. However, emotional difficulty may early express itself in a mild or severe impairment of appetite, an accentuation of preexisting food idiosyncrancies, or in an anxiety-allaying increased desire for food. In the cases studied, the frequency (25%) of loss of appetite for breakfast was interesting. Some patients awakened with hunger but experienced nausea or satiety after a few bites of food. Later in the morning they could eat with relish, and the other meals of the day were well tolerated. This pattern, like that of morning asthenia, reflects an excessive amount of anxiety and tension which is maximal upon arising, and only after these patients gear themselves to the routine of the day do they stabilize sufficiently to allow for more normal gastrointestinal functioning.

Recurrent headache, localized or generalized, and varying in type, not accompanied with evidence of increased intracranial pressure or clear-cut manifestations of other specific disease entities, is a well-known emotionally conditioned symptom. However, in the 30% of the patients who presented such a complaint, an emotional cause was rarely suspected initially. Many had received intensive treatment for chronic nasal sinusitis, allergic rhinitis, histamine cephalalgia, and "atypical" migraine, and only after these approaches had failed was psychiatric investigation undertaken.

Pain or aching in the muscles of the neck, back, chest, or extremities was a prominent presenting complaint in 43% of the patients. Such symptoms are frequent manifestations of excessive emotional tension and are prone to occur when an individual is driving himself too hard, op-

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erating under undue pressure or responsibility, or forced to restrain aggressive impulses which have accumulated. He may suffer recurring tightness in the posterior cervical musculature, interscapular or lumbar backaches, or he may have migratory muscular and periarticular pains which superficially suggest rheumatoid arthritis. Chest pain, so alarming because of its implication of coronary artery insufficiency, is often a manifestation of spasm or excessive tension in intercostal and/or pectoralis muscles. Of particular interest in the group of patients was the frequency (20%) of symptoms referable to the shoulder and arm, occurring in the beginning or during the course of their illnesses. Usually, these symptoms suggested a subacromial bursitis or a tendonitis in the musculotendinous cuff of the humerus, but occasionally a marked similarity to a scalenus anticus syndrome or a shoulder-hand syndrome was present. In some instances it seemed that excessive muscular tension rendered joint structures and muscles more susceptible to trauma and strain. It is possible that failure to deal with the emotional disturbance accompanying some of these problems accounts for their chronicity and poor response to physiotherapy and other measures.

The symptoms which have been discussed are some of the early somatic manifestations of emotional disturbances. Their presence as primary or secondary complaints in a medical history, and in the absence of subjective or objective evidence of emotional abnormality, may be the only indications of the psychosomatic nature of a patient's illness. When these complaints are present, a thorough investigation of the life situations and personality of the patient is indicated.

1300 University Ave.

OBSERVATIONS ON THE SURGICAL TREATMENT OF MITRAL STENOSIS BY COMMISSUROTOMY

Thomas J. E. O'Neill, M.D., Robert P. Glover, M.D.
and
Charles P. Bailey, M.D., Philadelphia

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The surgery of mitral stenosis has played the primary role in introducing the current principles of intracardiac surgery, and the success of this venture has served to establish it as a background for future developments. Since the first successful operation performed by us, June 10, 1948, there have been a succession of favorable results. These principles have been projected to apply to other defects, such as pulmonic and aortic abnormalities and the septal defects. Nevertheless, efforts in none of these other defects have been more gratifying than the original efforts in mitral stenosis.

THE BASIC PROBLEMS

The disease itself is an acquired one, mostly following attacks of rheumatic fever. The basic problem has always been a surgical one, leading out of the observation that the fault is a mechanical stricture. Heretofore, correction of this defect has been hampered not only by technical difficulties but also by needlessly perverse reasoning. These difficulties have now been overcome, so that in the light of acceptably defined criteria the disease must be considered as curable.

Medical treatment has not influenced the basic pathology in any demonstrable fashion, and has suceeded only in parrying the immediate onslaughts of the inevitably occurring complications. The result has been either an unhampered progression to death or the demand of concessions on the part of the patient in the form of habituation to medicines, loss of productivity, loss of bodily functions, and complete invalidism.

The only real hope, therefore, is correction or favorable alleviation of the basic pathological process. This necessarily means surgical treatment.

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REVIEW OF TECHNIQUES

Success depends primarily on the operative treatment, and so the techniques employed merit a brief review. The object is to enlarge the stenotic orifice in such a manner as to allow a greater transfer of blood from the left atrium to the left ventricle. This not only will reduce the pulmonary vascular hypertension, which caused the dyspnea, edema, and hemoptysis, but also will improve the left ventricular filling and supply greater outflow to the systemic circuit obviating the fatigue characterized by poor response to exercise.

It is essential that this enlargement not be accompanied with any significant production of regurgitation, lest the benefit be nullified. This is a matter of skillful application of sound surgical principles alone, and must not be left to chance operative misadventure.

After review of all related data, including those contributed through our own efforts, it became clear that the best results could be obtained most consistently only by use of the knife to accomplish commissurotomy. Another technique, the so-called finger fracture of the commissures, can attain a certain percentage of satisfactory results; nevertheless, it also will result in a higher mortality rate and yield a lower percentage of excellent results. This is understandable when it is realized that one has no control either over the direction of the tears or their extent. Such a situation represents a true handicap and should be used only in those cases that do not allow enough room for the knife, such as seen in obliterated appendages and dense atrial wall thromboses. The use of the knife allows one to select intelligently the exact direction as it applies to either commissure, and also the extent of the incision. This is the only way one can insure that a damaging or fatal regurgitation will not occur. It is also more effective in securing adequate opening of the orifice.

STAGES OF THE DISEASE

An operation, no matter how cleverly done, cannot lead to desirable results if the selection of the patient is an improper one. It is necessary, therefore, to agree on certain recognizable stages of the disease and relate them to the kind of procedure that is likely to be available.

To this end a classification of the stages of mitral stenosis containing the appropriate qualifying criteria is submitted as follows:

Stage I.....Asymptomatic
Stage II.....Statically incapacitating
Stage III.....Progressively incapacitating
Stage IV.....Terminally incapacitating
Stage V.....Irretrievable

Stage I.—The asymptomatic stage implies the presence of mitral valve deformity giving rise to a mitral diastolic murmur in a patient who is not handicapped physiologically and demonstrates no symptoms. He is obviously not in need of operative intervention. This stage is significant only to the extent that it may progress at some future date.

Stage II.—The statically incapacitating stage is one in which there is the appearance of symptoms of various kinds that remain stationary or constant for relatively long periods of time. These symptoms may be mild or severe. Usually the patient is able to live a life regulated by certain restrictions placed on his activities. It is not uncommon for this stage to progress to the more severe stages or even precipitate into sudden death. Operative treatment in this stage is definitely indicated in order to prevent such progression. There is the strong probability of relatively low mortality rate and a high degree of restoration.

Stage III.—The progressively incapacitating stage implies certain advance in the severity of the disabilities together with superimposition of the tragic complications of the valvular stenosis, such as auricular fibrillation, pulmonary arteriolar fibrosis, auricular thrombosis, and arterial emboli. Some of these patients have passed the optimum time for operation but still constitute favorable candidates for surgery in that restoration of physiological dynamics is still highly probable. Without valve correction those in this stage generally pursue a steady downhill course.

Stage IV.—The terminally incapacitating stage is characterized by the presence of totally debilitating symptoms rendering life practically useless. Drugs are of slight, if any, benefit in controlling the complications. Although many of the changes are permanent, a certain percentage of these patients may derive some benefit from commissurotomy, while others may be favored only with prolongation of life. It is to be realized that this is the least favorable stage, and less is to be expected of restorative measures while the mortality rate will be higher.

Stage V.—The irretrievable stage is designated as that in which not only is there a serious degree of mitral stenosis but also there are, additionally, hopeless degenerative, infectious, or neoplastic diseases of other organs even including the myocardium, blood vessels, and the other heart valves themselves. Even though the patient might be fortunate enough to survive operation, restoration of valve function could have little effect on the future course of the patient.

There are, however, some situations in which the disqualifying entity is only a temporary deterent as may be seen in rheumatic carditis and subacute bacterial endocarditis, and the patient should be reevaluated provided there is abatement of these complications.

In review, only those patients who belong in stage I and stage V are to be considered absolutely inoperable. Patients belonging in stages II, III, and IV are suitable candidates for operation, and in the majority surgery should be considered imperative in the best interests of the patient. Progression is always in the direction of the more serious stage and can occur with extreme rapidity. One should not be guilty of denying the patient his right to surgical correction while his chances for greatest success are at the maximum.

RESULTS OF OPERATION

Since the first successful use of commissurotomy in our clinic three years ago, we have operated on a total of 214 patients (through May, 1951). There has been at least a six-month follow-up in more than 100 of these patients. The results are classified as follows:

1. Excellent.....return to normal existence without aid of drugs except in some where the questionable need for digitalis exists.
2. Improved.....greater activity associated with less fatigue, together with improved response to required therapy.
3. Unimproved....current status is that of little or no improvement. A number of these are recently postoperative patients, consequently some will improve in time.
4. Dead.....most are operative deaths due mainly to (1) production of insufficiency, (2) hemorrhage, and (3) cerebral emboli.

The present estimation of results is based upon the current status of all 214 patients:

Excellent 89 (41.6%)
Improved 70 (32.7%)
Unimproved 29 (13.0%)
Dead—all causes.....26 (12.6%)

Among the deaths five were late deaths, three of which were noncardiac. Seventy-four per cent of the patients undergoing surgery have either improved or are now in excellent condition. The 13% of unimproved patients are generally in no worse state than they had been preoperatively. The total operative survival rate is 89.8%.

230 N. Broad Street. (Dr. O'Neill).

The Patient's Viewpoint.—The blame for an inadequate history does not always lie with the physician. Most patients do not realize or appreciate the value of a history. Their main objective appears to be the physical examination. They bring their body, like a car, into your garage, for you the mechanic, to discover any knocks or incipient breakdowns. . . . To read a patient's mind is sometimes difficult. There may be a discrepancy between what he says and what he thinks. As a general rule, new patients do not tell all on their first visit. . . . Some very startling and relevant information is only given after the second or third visits.—H. J. Skully, M.D., Clinical and Laboratory Notes: The Patient's Viewpoint, *Canadian Medical Association Journal*, July, 1951.

MASS BLOOD TYPING

SUMMARY AND ANALYSIS OF THE JACKSON, MICH., BLOOD TYPING PROGRAM

Jacques H. Ahronheim, M.D., Jackson, Mich.

The problem of mass blood typing of entire communities has been the source of considerable debate and disagreement, and many arguments have been raised as to the advisability or inadvisability of such a project. The medical profession as a whole has never taken a stand in favor of such a program, and whatever opinions were expressed by spokesmen of medical organizations were decidedly opposed to it.[1] The arguments brought forth by either side were for the most part based on personal opinions, all of which undoubtedly had their merits. The present article, which is a brief review and analysis of the Jackson, Mich., Mass Blood Typing Program, is not an attempt to solve the problem one way or another, but, by bringing actual facts and figures, an attempt to answer some of the questions which have arisen in this debate. These questions deal particularly with the physical possibilities of carrying out such a project, its total cost, the rate of error, and the suitability of tags as a means of identification of the blood types.

The Jackson Mass Blood Typing Program was conducted during the winter months of 1950-1951, over a period of 80 working days. A total of 48,652 persons were typed, representing 45% of this county of 107,925 persons (U. S. Census of 1950). An average of 608 persons were typed every day. The typing procedure included determination of the blood group by direct and reverse typing as well as determination of the D (Rh_o) factor and, if found negative, of the C (Rh') factor. Initially, the project was carried out with volunteer workers and with only one paid employee. After one week, when the program seemed well on its way, the volunteer workers were replaced by paid employees, the complete change being effected over a period of about one week. The program was considered completed when the number of daily specimens remained consistently at a low level.

The blood typing program was conducted under the auspices of the Michigan Civil Defense authorities. The technical methods employed have been described in detail previously [2] and need not be repeated here.

COST OF TYPING PROGRAM

The total cost of blood typing 48,652 persons amounted to $27,008.40, or 55½ cents per person typed. This is the cost incurred locally and does not include the cost of the identification tags and the administrative expenses incurred by the Michigan Civil Defense authorities who supervised this work. The total amount is broken down into the following figures: payroll, $17,573.52; serum, $6,119; administrative cost, $1,086.91; supplies and miscellaneous, $2,230.07.

Payroll.—The paid personnel contributed 14,600 man-hours, which included the work of two medical technologists and five, later six, registered nurses. The rest of the personnel consisted of untrained helpers who were assigned to either the typing laboratory or the blood collecting teams.

Serum.—The following amounts of typing serum, which was obtained from Ortho Pharmaceutical Co., Raritan, N. J., were used: 1,016 cc. of anti-A serum and 976 cc. of anti-B serum, at a combined cost of $1,025; 264 cc. of anti-C serum, at a cost of $792; and 1,434 cc. of anti-D serum, at a cost of $4,302.

Administrative Cost.—This item consisted principally of the fee for use of the facilities of the W. A. Foote Memorial Hospital, where the typing laboratory was located. It included rent of the premises as well as numerous expenses incurred in the administration of the program, such as bookkeeping, handling of payroll, ordering of supplies, use of numerous items of laboratory equipment, use of the workshop, and the services of its personnel.

Supplies and Miscellaneous.—This item has been discussed in detail previously [2] and need not be repeated here. It includes every piece of equipment needed in such project which could not be obtained on a loan basis.

Voluntary Contributions.—In order to arrive at a correct impression of the cost of mass blood typing, the many voluntary contributions made in the Jackson program must be considered. The relatively low cost of the project was largely the result of the interest and cooperation of various local concerns and individuals. The contributions included a full force of volunteer helpers for a period of from one to two weeks. The services of the coordinator were loaned to the program by a local concern. Equipment and material supplied free of charge or on a loan basis included the lumber for the working benches and a refrigerator. The contributions in time and effort made by the local Red Cross Chapter saved many man-hours. The necessary publicity was handled free of charge by the local newspaper and radio station. The administrative fee charged by W. A. Foote Memorial Hospital was in no way commensurate with the many services rendered by this institution, and a good portion of these services should be considered voluntary contributions.

RATE OF ERROR

Two per cent of the blood samples drawn were submitted to the laboratories of the Michigan Department of Health for the purpose of rechecking. In 989 blood specimens submitted the following errors were found: blood grouping, 1 error (0.1%); D factor, 7 errors (0.7%); C factor, 3 errors (0.3%). There were also seven errors due to incorrect labelling of specimens on shipment; these errors appeared at no time on the typees' records.

From the pathological laboratories of W. A. Foote Memorial and Mercy hospitals.

1. Blood Procurement, editorial, J. A. M. A. **144**: 550-551 (Oct. 14) 1950. Mass Blood Typing, College of American Pathologists, Newsletter, (Feb.) 1951; (March) 1951.

2. Ahronheim, J. H.: Mass Blood Typing: A Report on the Typing Program of Jackson, Mich. Am. J. Clin. Path. **21**: 387-393 (April) 1951.

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Obviously, this rate of error compares favorably with that found in mass blood typing programs carried out in the past and with that anticipated by the opponents to mass blood typing. On the other hand, the fact that errors did occur proves that the human element had not been fully excluded. The percentage of errors, per se, does not suffice in determining the reliability of mass blood typing; the figures obtained must be analyzed before this rate of error can be accepted as low enough or rejected as too high. The question which must be answered is not so much "How many mistakes did occur?" but "How disastrous could these errors be?" The one error found in blood grouping is unquestionably serious enough and should in no way be minimized. If this one case of incorrectly determined blood group can be used as a basis for statistical analysis, this would mean that one person in a thousand may die from a blood transfusion, a fact which unquestionably represents a serious argument against mass blood typing. On the other hand, it must not be forgotten that the immediate availability of blood may save many more lives in the same group of a thousand individuals.

Errors in the determination of the C factor are relatively inconsequential, considering the rarity of hemolytic reactions from sensitization to the C factor.

In analyzing the errors encountered in the determination of the D factor, the following facts must be taken into consideration:

1. A falsely negative D typing will not cause undue complications except in the extremely rare Hr sensitization.

2. Blood containing the Rh factor will not always cause Rh sensitization when transfused into Rh-negative persons, but only at a rate of about 50% (Strumia and McGraw [3]).

3. Klein and co-workers [4] in their recent investigation on Rh sensitization following repeated transfusions of Rh-positive blood could show that even in those instances where sensitization does take place hemolytic reactions will occur only in exceptional cases.

4. If such reactions do occur they are not likely to be fatal, and added precautions will, in most cases, not be too late.

5. The combination of an Rh-negative mother, an Rh-positive father, and an Rh-positive child will give rise to erythroblastosis only once in 26 instances (Levine and Wigod [5]).

These considerations seem to indicate that the number of instances in which errors in the determination of the D factor will prove to be disastrous is actually very small and will, apparently, consist mostly of cases of erythroblastosis due to Rh sensitization of females before or during the child-bearing age.

RECORDING OF BLOOD TYPES

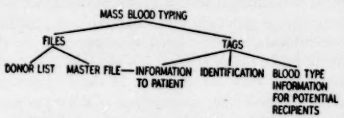
In arriving at the most practical form of recording of blood types, a clear picture must be formed as to the purpose or purposes of community-wide blood typing. Inasmuch as the Jackson Mass Blood Typing Program began, more or less, on a trial and error basis, this picture, hazy at first, became clearer in the minds of those charged with carrying out the program the nearer the program approached completion. Obviously, the principal purposes of such undertaking are the creation of a practically inexhaustible donor list and the establishment of records assuring immediate availability of blood types of potential recipients. Secondary from the standpoint of blood typing, but, nevertheless, just as important, is the use of these records for purposes of identification. In the Jackson program, a file, arranged in alphabetical order, is kept in the office of Civil Defense and serves principally as a master file. The actual donor list, which is arranged in alphabetical order as well as according to blood types, is stored in a secure place in the Civil Defense Control Center, and a duplicate file is placed in one of the local hospitals. It is planned to make use of these lists in a threefold manner:

1. To supply large numbers of donors in major disasters within the community.

2. To supply donors to hospitalized persons needing many units of rare type blood.

3. To contribute, on a moment's notice, to the needs of highly industralized and densely populated neighbor communities should disaster strike them.

In selecting a proper method of recording blood types for immediate availability to prospective recipients, indelibility and ease of carrying it on the body were major factors. Metal tags 1 × 2 in. (2.5 × 5 cm.), of the type



Diagramatic representation of recording of blood types.

used by the army, seemed to answer this purpose and, at the same time, served as simple means of identification (Figure).

The objection raised by opponents to mass blood typing—that these tags will not be worn by all—is undoubtedly true. The purposes of mass typing—to identify the dead and unconscious and to record the blood types of the injured—would be defeated unless such records are on the body in an easily accessible place. While tattooing of blood types and names might answer that purpose more readily, the actual number of persons consenting to such procedure would, probably, be even smaller than those not carrying tags on their bodies; besides general resentment against tattooing, objections might arise on religious grounds based on Biblical teachings (Leviticus xix. 28). Danger of infection; prohibitive expense in funds, time, and effort; and uselessness as means of identification in decomposed and burnt bodies should eliminate tattooing from this project.

In order to obtain a concrete expression as to the validity of tags as means of identification, a survey was made among some of those persons who had been blood

3. Strumia, M. M., and McGraw, J. J.: Blood and Plasma Transfusions, Philadelphia, F. A. Davis Company, 1949.

4. Klein, S. J.; Konwaler, B. E., and Mahany, W. K.: Rh Sensitization Following Repeated Transfusions of Rh Positive Blood Into Rh Negative Recipients, Am. J. Clin. Path. **21**: 399-408 (May) 1951.

5. Levine, P., and Wigod, M.: 10 Years of Rh, Exhibit, before the International and Fourth Congress on Obstetrics and Gynecology, New York, May 14-19, 1950.

typed and who had already received their tags. The survey was made by means of questionnaires in which they were requested to give answers to the following questions:

1. Do you wear your identification tag?
2. If so, where do you wear it? (neck, purse, wallet, key ring, other?)
3. If given the choice would you have consented to having your blood type tattooed to your skin in an inconspicuous place?

The persons from whom answers were received were employees of a hospital, two industrial plants, and one business concern. No children were included in the survey. A total of 665 persons replied, 381 of whom were men (57.3%). Of these 665 persons, 479 (72.1%) replied that they carried their identification tags on their bodies while 186 (27.9%) indicated that they did not. The places, in which the tags were carried, were reported as follows: around neck, 8 (1.7%); in purse, 81 (17%); in wallet, 284 (59.2%); on key chain, 94 (19.6%); in various other places (mostly pocket), 12 (2.5%). Two-hundred and twenty-nine persons (40.3%) indicated that they would consent to tattooing of blood types, while 339 (59.7%) were opposed to it.

Although the information on the blood types as recorded on the identification tags is primarily directed to medical personnel, it will be found practical to make this information as generally understandable as possible. Sufficient information has been disseminated on the Rh factor to make many laymen Rh-conscious and eager to know of their own blood types. In the Jackson project, where the Race-Fisher terminology of Rh types was used, the local Civil Defense Office was flooded with inquiries as to the meaning of the symbols denoting the D and C factors. Much confusion will be avoided if a form of recording could be agreed on which is generally understandable even if it does not conform with the latest medical terminology. The information on the tags must be concise, and should be confined to name, address, religion, and blood type. Although the Civil Defense authorities had decided against a continuation of the Jackson program once it was declared terminated, it might prove desirable, especially in larger communities, to establish a permanent blood typing center for newcomers to the community, newborn infants, and those persons who had failed to have their blood typed during the official project. Facilities should also be available for the printing of new tags in cases of changed status or lost tags.

SUMMARY AND CONCLUSIONS

The information obtained from the Jackson Mass Blood Typing Program can be summarized as follows:

1. Forty-five per cent of the residents of a community of slightly over 100,000 in rural and urban population were blood typed with relatively moderate expenditure in time, effort, and money.

2. The total cost of 55½ cents per person typed did not include voluntary contributions in man-hours and equipment.

3. The rate of error was 0.1% in the blood grouping and 0.7% in typing for the D factor. While an error in blood grouping might prove to be fatal, the immediate availability of blood types of potential recipients is likely to save many lives. Disastrous results from incorrectly determined D factors are extremely rare and are largely confined to cases of hemolytic disease of the newborn due to sensitization of the mother against the Rh factor.

4. The recording of blood types on identification tags is preferable to tattooing. Of persons typed in the Jackson program and interrogated through questionnaires, 72.1% carry their tags on their bodies, mostly in purse, wallet or key chain. Of the persons surveyed, 59.7% would not have consented to tattooing of blood types.

The principal question remains unanswered: Considering the arguments for and against mass blood typing, will the return from such project in lives saved justify the expenditure of time, effort, and funds? It seems that only grim reality can give that answer. Any major disaster, military or other, will prove or disprove that the effort was not in vain and that the number of lives saved was actually higher than could reasonably be expected through any other means.

205 N. East Ave.

CLINICAL NOTES

HYPERPOTASSEMIA AND HYPOPOTASSEMIA IN CASE OF ANURIA FOLLOWED BY SEVERE DIURESIS

ELECTROCARDIOGRAPHIC CHANGES

Michael Bernreiter, M.D.
and
E. R. Calovich, M.D., Kansas City, Mo.

Hyperpotassemia may occur as the result of (1) excess intake, (2) faulty metabolism, and (3) impaired excretion. The clinical syndrome of potassium intoxication and the characteristic electrocardiographic changes have been recognized with increasing frequency.

Hypopotassemia must be considered whenever a patient cannot take food orally, loses large quantities of gastrointestinal secretions (diarrhea and vomiting), or has severe diuresis as a result of intravenously administered dextrose and sodium chloride. The administration of pituitary corticotropic hormone (ACTH) may also lead to potassium deficiency. Drowsiness, weakness, abdominal distention, anorexia, nausea, loss of peripheral reflexes, dilatation of the heart, ectopic rhythm, and hypotension are significant findings in cases of potassium depletion. Changes in the electrocardiogram typical for hypokalemia are recognized and reported more frequently.

REPORT OF A CASE

A white man, 44, entered the hospital on Sept. 17, 1950, in a comatose condition with extreme dyspnea, completely anuric, and appearing severely ill. From the accompanying relatives it was learned that the patient had had urinary difficulty for about two weeks prior to his admission and that he had passed no urine in the last three days. He became completely unconscious 24 hours before admission. Extreme restlessness was apparent.

From the Department of Cardiology, St. Mary's Hospital.

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The past history was noncontributory. The family history revealed nothing of importance. Physical examination showed the patient was well developed and fairly well nourished, extremely dyspneic, and in comatose condition. The temperature was 99 F., the pulse rate 120, and the respiration rate 24 per minute. The vessels of the neck were congested. Moist rales were heard in both bases. The maximum precordial impulse was in the sixth intercostal space to the left of the midclavicular line. The area of precordial dullness was increased. The blood pressure was 185 mm. of mercury systolic and 85 diastolic. The heart rhythm was regular, the sounds were distant, and a Grade I systolic murmur was heard at the base. The abdomen was distended, and there was a mild generalized rigidity. No masses were palpable in the abdomen, and there was no ascites. The extremities showed a 1+ pitting edema. Reflexes were hyperactive throughout. The blood count showed a white cell count of 16,400 and a red cell count of 3,210,000, with 70% hemoglobin. The differential count showed 92% polymorphonuclears, 6% lymphocytes, and 2% eosinophils. The blood sugar was 124 mg. per 100 cc., the nonprotein nitrogen 248 mg. per 100 cc., the chlorides 630 mg., the total protein 5.6 gm., the albumin 4.2 gm. and the globulin 1.4 gm. A portable chest roentgenogram taken on admission showed a variation in the ventilation of the right base with decrease in expansion of the right part of the chest, with the added

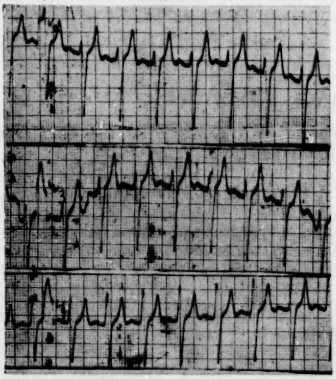

Fig. 1.—Potassium intoxication after complete anuria of four days. Note the tall, narrow, pointed T waves. The QRS interval is slightly prolonged. The Q-T interval is also prolonged for the existing rate. Only the most characteristic leads are shown in this and subsequent Figures.

notation that a pulmonary infarction must be considered. An electrocardiogram taken on the day of admission showed convincing evidence of potassium intoxication (Fig. 1).

A catheter was inserted into the patient immediately after he entered the hospital, but no urine could be obtained. The following morning the patient appeared moribund. An electrocardiogram taken at that time showed progression of the potassium intoxication (Fig. 2). A urologist (Dr. William Staggs) made a cystoscopy of the patient in the ward bed because his condition did not permit transfer to surgery. He found no urine in the patient's bladder. It was also noted that the patient had no left ureteral orifice. A catheter was passed up the right ureter, and 1,000 cc. of urine was obtained. Urinalysis at this time showed a trace of albumin, many leukocytes, and many red cells. Through the catheter by means of a syringe was obtained 4,500 cc. of urine during the next 24 hours. An extensive intravenous program was started, and the patient received an average of 4,000 cc. of sodium chloride and dextrose intravenously. After 24 hours of this treatment, the patient's condition showed some moderate improvement. But on the fourth day it again took a turn for the worse. The leukocyte count was 23,600, and the nonprotein nitrogen rose to 252 mg. A severe diarrhea, vomiting, and excessive sweating developed. A small bedsore was noticed at this time in the sacral region. On the eighth hospital day (after the patient had received a total of about 25,000 cc. of intravenous fluid and after the diarrhea, vomiting, and excessive sweating had persisted unabated for five successive days and nights) an electrocardiogram showed evidence of potassium depletion (Fig. 3). The patient's respiration had become rapid and

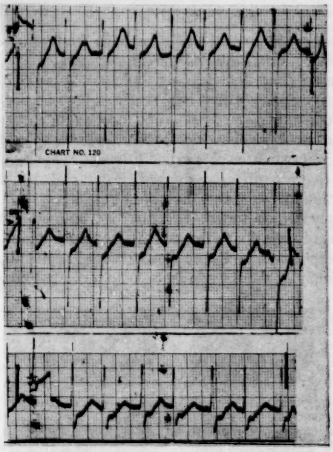

Fig. 2.—Progression of potassium intoxication. Note particularly the depression of the S-T segment, which tends to become a direct line to the apex of the T wave. Note the prolonged Q-T interval and complete auriculoventricular block.

shallow, and a profound muscular weakness developed. There was a flaccid paralysis of both arms and legs, and the deep tendon reflexes could not be obtained. The patient was conscious but was unable to raise his arms or head. Two grams of potassium chloride was given within the next 30 minutes. He received a total of 8 gm. of potassium chloride within the next three days,

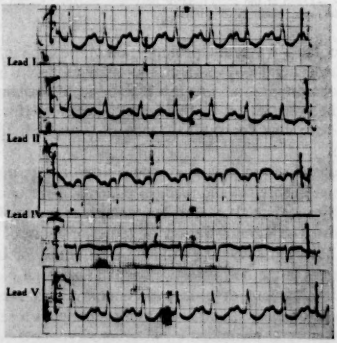

Fig. 3.--Hypopotassemia after severe diarrhea, vomiting, and pronounced diuresis. Note severe depression and sagging of S-T segments.

at the end of which period his condition showed rather remarkable improvement. The paralysis and weakness disappeared, and the electrocardiographic findings gradually returned to normal.

On his 11th hospital day the patient was taken to surgery, with the right ureteral catheter still in place. A retrograde pyelogram was taken. The left ureteral opening could not be found

on cystoscopic examination. On withdrawal of the right ureteral catheter, a stone was removed from the right ureter and subsequently extracted from the bladder.

The patient's recovery from here on was uneventful. The blood chemistry returned to normal. A recent electrocardiogram taken in the office of one of us (M. B.) showed nothing unusual (Fig. 4). The patient was dismissed on the 34th hospital day.

COMMENT

The most important single factor in the production of potassium intoxication is the suppression of the urine volume or conditions leading to actual anuria. There is increasing evidence that hyperkalemia may be the cause of sudden unexplained death of patients with anuria. The correlation between the electrocardiographic changes and serum potassium level is crude to be sure, but the value of the electrocardiogram as the first clue to the existence of potassium poisoning has been repeatedly and convincingly demonstrated. Tall, narrow, pointed T waves are usually the first electrocardiographic manifestation of hyperpotassemia. Depression of the S-T segments, with a tendency of the S wave to become a direct line to the

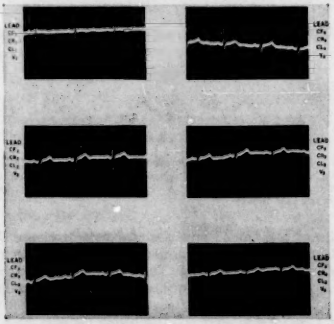

Fig. 4.—Taken at the conclusion of potassium therapy. Return of electrocardiographic findings to normal.

apex of the T wave, and prolongation of the QRS interval are the general sequence of the changes noted in the electrocardiogram and were observed in the tracing obtained on our patient on the day of admission. It was an immediate clue for the existence of potassium intoxication.

Reduced serum potassium concentrations are not uncommon in surgical and medical patients. The condition is easily aggravated by diarrhea, vomiting, and excessive diuresis. The administration of large amounts of dextrose has been shown to produce a reduction of serum potassium in the normal as well as the abnormal person. The development of profound weakness and eventual paralysis of skeletal and respiratory muscles is a serious and often fatal complication of severe hypopotassemia. The concentration of potassium in the extracellular fluid may remain normal and even be slightly elevated while the cells are severely depleted.

The electrocardiogram provides a convenient method for detecting the presence of low levels of serum potassium. The electrocardiographic changes are usually quite specific and sufficiently accurate to permit a diagnosis of hypokalemia prior to confirmation by laboratory findings. The most characteristic electrocardiographic findings in cases of this condition are depressed, sagging S-T segments and low amplitude of the T waves in most of the lead.

SUMMARY

A case of hyperpotassemia and hypopotassemia in a patient with obstruction in the right ureter and congenital absence of the left kidney is reported. Hyperkalemia may be a fatal accompaniment of anuria. Characteristic changes in the electrocardiogram represent the earliest signs of potassium intoxication. It is a more reliable guide than the determination of chemical changes in the blood. The establishment of diuresis and the administration of intravenous fluids constitutes the most effective treatment of hyperkalemia. The development of hypokalemia must be anticipated, and treatment with potassium salts promptly instituted to avoid the serious effects of marked reduction in serum potassium levels. The electrocardiogram offers an accurate and convenient method for the early detection of hypokalemia and is an excellent guide to therapy.

436 Professional Building (Dr. Bernreiter).

TETANUS NEONATORUM

REPORT OF TWO CASES WITH OMPHALECTOMY AND RECOVERY

Harry F. Dietrich, M.D., Beverly Hills, Calif.

Tetanus of the newborn is becoming increasingly rare in this country, but because the outcome is usually fatal it remains a serious condition. In his review of 1930, Hines [1] collected records of 5,767 deaths and 27 instances of recovery in tetanus neonatorum. This represents a mortality of 99.54%. Jelliffe,[2] under primitive conditions in Nigeria, cited one recovery in 25 cases. Obviously many isolated recoveries have not been reported, though the temptation to record even a single favorable result in this disease is great. In reporting a case with recovery, Block and Foster [3] refer to five recoveries in 38 cases reviewed by Bratusch-Marrain in two papers. They also mention recoveries reported by Jones and Jenkins. The four cases described by the latter author [4] are somewhat unusual in that each was accompanied with a fever of 103.6 F. to 107 F. and each showed an astonishingly rapid recovery. Ordinarily, tetanus, prior to the administration of serum, is marked by a normal temperature or low-grade fever and except in the mildest of instances runs a protracted course. Muelchi [5] and Smith [6]

From Children's Hospital and the Department of Pediatrics of the University of Southern California School of Medicine, Los Angeles, and The Beverly Hills Clinic, Beverly Hills.

1. Hines, E. A., Jr.: Tetanus Neonatorum: Report of a Case with Recovery, Am. J. Dis. Child. **39**: 560-572 (March) 1930.
2. Jelliffe, D. B.: Tetanus Neonatorum, Arch. Dis. Childhood **25**: 190-192 (June) 1950.
3. Block, W. M., and Foster, M. J.: Tetanus of the Newborn Infant: Report of a Case with Recovery, J. Pediat. **34**: 633-635 (May) 1949.
4. Jenkins, H. B.: Nasal Gavage in Tetanus Neonatorum and Other Serious Diseases of Infants: Report of Cases, J. M. A. Georgia **30**: 18-21 (Jan.) 1941.
5. Muelchi, A. F.: Magnesium Sulphate in the Treatment of Tetanus Neonatorum, Am. J. Dis. Child. **32**: 393-395 (Sept.) 1926.
6. Smith, D. L.: Tetanus Neonatorum: Report of a Case with Recovery, Arch. Ped. **45**: 562-565 (Sept.) 1928.

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have each reported single instances of recovery from tetanus of the newborn, and to these and any other recorded cases I add the following.

REPORT OF CASES

CASE 1.—D. B., a 13-day-old female, was referred to the Children's Hospital with a diagnosis of tetany. The family history was noncontributory. Pregnancy had been uneventful. The infant had been delivered by low forceps after an easy 15-hr. labor. Birth weight was 6 lb. 13 oz. (3 kg.). There were no immediate postnatal disturbances. She was bottle fed and took approximately 4 oz. (125 cc.) of similac® every four hours. The cord dropped off on the fifth day and the navel remained clean and dry.

When the baby was 10 days old, the mother had some difficulty inserting the nipple into its mouth and noticed considerable stiffness of its arms and legs. During the next three days a generalized rigidity became more apparent and the mother had increasing difficulty trying to insert the nipple in the baby's mouth. On the day before admission frequent "jerkings" and "spasms" were observed.

Physical Examination.—On physical examination (Fig. 1) the infant showed a classic risus sardonicus. It had marked trismus and cried with tightly clenched jaws. The hands were fisted, and the arms and legs were flexed and stiff. The neck was relatively supple; the abdomen was boardlike. On respiration the rectus muscles remained spastic and only the flanks bulged on inspiration. Auditory and tactile stimuli regularly triggered generalized convulsive spasms. There was some dehydration. The umbilicus appeared clean. The temperature was normal.

Because the admitting resident (who had never before seen a case of it) diagnosed tetanus neonatorum, the patient was immediately given ⅓ grain (20 mg.) of secobarbital (seconal®) sodium by rectum and a short while later 20,000 units of tetanus antitoxin intramuscularly.

Laboratory Findings.—The results of tests were as follows: white blood cell count 17,800, with polymorphonuclear leukocytes 56, lymphocytes 36, monocytes 6, and eosinophils 2%; calcium 11.8, and phosphorus 6.7 mg. per 100 cc. The urine contained traces of albumin and a few white blood cells. The cerebrospinal fluid (ninth day after admission) showed a Pandy reaction of 2+; 109 white blood cells, with 98% lymphocytes; 30 crenated red blood cells per 100 white blood cells; culture, negative. On the 19th day after admission the cerebrospinal fluid was negative, and it was felt that the earlier abnormal findings were probably due to bleeding as a result of convulsions.

Fig. 1 (case 1).—Patient on hospital entry, showing spastic condition even with heavy sedation.

Treatment.—On the following morning one of the residents asked what the usual focus of infection was in tetanus of the newborn. When the umbilicus was implicated, he then asked why it was not treated as any other primary tetanus lesion. There was no logical negative answer, so surgical consultation was obtained. After adequate sedation and local anesthesia, 20,000 units of tetanus antitoxin were injected periumbilically and an equal amount was given intramuscularly. The navel was then excised down to the peritoneum. With the help of Dr. George Donnell, I attempted, but was unable, to isolate Clostridium tetani from the excised tissue. Routine cultures yielded a coagulase-positive hemolytic Staphylococcus aureus, diphtheroids, and gamma Streptococci. Penicillin was given prophylactically.

Course.—The infant was put on continuous intravenous fluids, and its spasms were finally controlled by alternating doses of secobarbital sodium, ¼ grain (15 mg.) and amobarbital (amytal®) sodium, ⅜ grain (25 mg.) every two hours. At maximal dosage

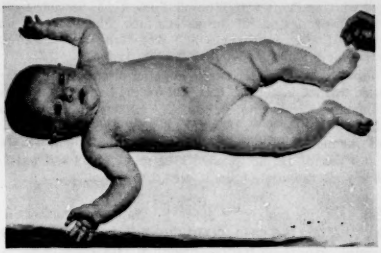

Fig. 2.—Patient at the age of 5 mo., normal.

this amounted to 1½ grains (0.1 gm.) of secobarbital and 2¼ grains (0.15 gm.) of amobarbital sodium per day. After the fifth day the infant was fed by catheter to the stomach; this was continued for two and one-half weeks. Sedatives were discontinued on the 25th day, and the patient was discharged, somewhat stiff but well, on the 30th day. X-rays of the spine on discharge showed no abnormality. Discharge weight was 8 lb. (3.6 kg.).

Follow-Up.—Two and one-half weeks after discharge the physical examination was entirely negative and the weight was 9 lb. 5 oz. (4.4 kg.). At the age of 5 mo. the infant was completely normal and weighed 16 lb. 8 oz. (7.3 kg.) (Fig. 2).

CASE 2.—W. L., an 11-day-old white male infant, was admitted to the Children's Hospital with a diagnosis of questionable tetany. The family history was noncontributory. Pregnancy had been uneventful until term. Fifty-two hours prior to delivery the fetal membranes ruptured while the mother was working in the garden. She continued her work, which included the use of manure. Two days later, after an easy 8-hr. labor, the baby was born, weighing 7 lb. 11 oz. (3.4 kg.). There were no immediate postnatal disturbances. The infant was circumcised on the fourth day, and was discharged home on the fifth. On the ninth day the infant began to have attacks of projectile vomiting, and on the 10th day of life the mother noted that he was extremely irritable and had periods of shrill cry and stiffening at 5- to 10-min. intervals. On the day of entry into the hospital he was unable to open his mouth to nurse.

Physical Examination.—On entry to the hospital the infant was afebrile, generally stiff, and on stimulation had episodes of tight-jawed, shrill cry and generalized tremulous rigidity. The arms and legs were flexed and the hands clenched. The neck, back, and abdomen were unyieldingly rigid. Trismus and risus sardonicus were prominent. The umbilicus was crusted. The infant was immediately given 5 cc. of paraldehyde by rectum; a short while later, tetanus antitoxin, 20,000 units intramuscularly and 10,000 units periumbilically, was administered. The navel was then excised down to the peritoneum.

Laboratory Findings.—The laboratory findings were as follows: white blood cell count 15,600, with polymorphonuclear leukocytes 38, lymphocytes 46, monocytes 14, and eosinophils 2%. The urine contained albumin (3 +); there were occasional white blood cells and red blood cells; it was normal in 12 days. Nonprotein nitrogen, total serum protein, and albumin/globulin were normal. The cerebrospinal fluid (17th day) contained protein 100 mg. per 100 cc.; otherwise it was negative. The electroencephalogram was normal. X-rays showed the chest to be normal and the spine (before discharge), normal. Cultures from the excised navel showed Endamoeba coli and gamma strepto-

cocci; no anaerobes were isolated. Pathologic examination of a section of the excised navel revealed acute inflammation with abscess formation.

Course.—The infant was given penicillin and streptomycin for the concomitant secondary infection. Increasingly severe convulsions and spasms were finally controlled by alternating doses of phenobarbital ½ grain (30 mg.) and paraldehyde 5 cc. approximately every three hours. Feedings were given by nasal tube to the stomach. After one week the paraldehyde was dispensed with, and on the 10th hospital day it was possible to use a Breck feeder instead of the gavage tube. Phenobarbital was discontinued after four weeks and the infant was discharged home on the 31st day, weighing 8 lb. 9 oz. (3.3 kg.).

Follow-Up.—When seen two weeks after discharge the mother reported that the infant had been stiff for the first week at home. Examination revealed no abnormality other than an inguinal hernia. Weight was 9 lb. 12 oz. (4.4 kg.). The hernia was repaired one month after discharge, and when the patient was last seen at 4 mo. of age he weighed 17½ lb. (7.3 kg.) and was an extremely alert, entirely normal, attractive infant.

COMMENT

Because this is a case report and not a review, no controversial résumé of the treatment of tetanus will be attempted. However, it is my conviction that intramuscular antitoxin is effective and is the safest route of administration in children [7]; the experience of Silverthorne [8] is dramatically confirmatory. It is difficult to understand how Smathers and Weed [9] can recommend a regimen necessitating the administration of antitoxin intrathecally and intravenously, as well as intramuscularly, when 72% of their admittedly high mortalities occurred within 48 hr. of the beginning of such treatment. Yodh,[10] in reporting on 438 patients similarly treated with intrathecal, intravenous, intramuscular antitoxin, recorded that 127 deaths, or 59% of all his mortalities occurred within 24 hr. after treatment was started. The figures of Smathers and Weed and of Yodh certainly constitute a convincing argument against intrathecal and intravenous administration of the serum. Completely untreated tetanus would produce a greater variation in the time of death after entry into the hospital.

My reliance on secobarbital, amobarbital, phenobarbital and paraldehyde for sedation is based on previous experience [11] and on the observations of Silverthorne. Magnesium sulfate, chloral hydrate, and tribromoethanol were valuable drugs before the advent of the newer and safer barbiturates. I have had no experience with intravenous thiopentothal sodium [12] or mephenesin.[13] Curare (preferably as *d*-tubocurarine chloride U. S. P. in wax and oil) admittedly results in good muscular relaxation; its use, however, is accompanied with respiratory and other still incomprehensible dangers.[14]

The care of pharyngotracheal secretions in severe tetanus is a formidable but rarely impossible nursing task, and I cannot accept the dictum of Godman and Adriani [13b] or the inference of Harris, McDermott, and Montreuil [12] that all cases but the mildest should have early tracheotomy.

The present report is prompted by the recovery in two consecutive cases of tetanus of the newborn in which the umbilicus (as the most likely source of infection) was excised. Pratt [14d] states, "Excision of the site of infection, once the clinical symptoms of tetanus were present, did not ameliorate the course of the disease," and he and Silverthorne suggest conservative nonsurgical treatment of the focus of infection. The latter attitude does not seem theoretically sound. If one can, by nonshocking surgery, suspend the production of toxin and prevent any additional toxin from starting the ascent of a motor nerve,[15] it would seem a reasonable procedure. Such positive action would obviate the remote possibility of a later recrudescence of the disease. It would appear that excision of the umbilicus in tetanus neonatorum is a reasonable and possibly helpful therapeutic procedure. Additional trials, without relaxation of attention to the more important aspects of treatment, should give a definite answer as to the desirability of this type of surgery.

SUMMARY

Two cases of tetanus neonatorum are reported; in both, the umbilicus was excised as the probable source of infection. Both patients received moderate doses of intramuscular tetanus antitoxin and liberal doses of sedatives. They recovered, and it is suggested that omphalectomy may be a reasonable adjunctive therapy in this disease.

Further trial of this essentially benign surgical procedure, with strict attention to established therapeutic regimens, should provide a significant answer as to its value.

133 S. Laskey Dr.

7. Dietrich, H. F.: Tetanus in Childhood, with Special Reference to Treatment, Am. J. Dis. Child. **59**: 693-710 (April) 1940.

8. Silverthorne, N.: Tetanus, J. Pediat. **30**:195-198 (Feb.) 1947.

9. Smathers, H. M., and Weed, M. R.: The Treatment of Tetanus, Arch. Surg. **57**: 291-300 (Sept.) 1948.

10. Yodh, B. B.: Further Observations on the Treatment of Tetanus, Brit. M. J. **1**: 855-857 (April 24) 1937.

11. Footnote 6. Dietrich, H. F.: Sodium Propyl-Methyl-Carbinyl Allyl Barbiturate (Seconal): Clinical Evaluation of One of the Newer Barbiturates, Anesth. & Analg. **22**: 28-37 (Jan.-Feb.) 1943.

12. Harris, R. C.; McDermott, T. F., and Montreuil, F. L.: Treatment of Tetanus: A Report of 2 Cases with Critical Comment on New Therapeutic Resources, Pediat. **2**: 175-185 (Aug.) 1948.

13. (*a*) MacDonald, W. B.: A Case of Severe Tetanus Treated with a Continuous Infusion of "Myanesin" and "Sodium Pentothal," M. J. Australia **2**: 538-540 (Oct. 8) 1949. (*b*) Godman, H. E., and Adriani, J.: Management of Patients with Tetanus: Some Clinical Experiences with Various Muscle-Relaxing Agents, J. A. M. A. **141**: 754-756 (Nov. 12) 1949.

14. (*a*) Schlesinger, E. B.: Curare: Review of Its Therapeutic Effects and Their Physiological Basis, Am. J. Med. **1**: 518-530 (Nov.) 1946. (*b*) Foregger, R.: Fatalities Following Curare, J. A. M. A. **142**: 1344-1348 (April 29) 1950. (*c*) Cullen, S. C., and Quinn, C. S.: The Use of Curare in the Treatment of Tetanus: Case Report, Surgery **14**: 256-260 (Aug.) 1943. (*d*) Pratt, E. L.: Clinical Tetanus: A Study of 56 Cases, with Special Reference to Methods of Prevention and a Plan for Evaluating Treatment, J. A. M. A. **129**:1243-1247 (Dec. 29) 1945.

15. Friedemann, U.; Hollander, A., and Tarlov, I. M.: Investigations on the Pathogenesis of Tetanus III, J. Immunol. **40**: 325-364 (March) 1941.

General Practice.—Clearly general practitioners have before them a major decision. They may continue to accumulate gadgets—one or two for each specialty—and inadequately ape the specialists in focussing attention now on one organ, now on another. Or they may accept frankly the impossibility of being technically expert in all specialties and elect to know and treat the patient as a whole. They will then interest themselves in their patients as individuals and assist their struggles against the psychosomatic and degenerative diseases which are now moving to the foreground of medical practice. It is not implied that the technical aspects of general practice should be abandoned, but it is insisted that they should cease to be considered the only or principal contribution of the general practitioner.—Ian Stevenson, M.D., A New Day for the General Practitioner, *GP*, August, 1951.

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MEDICAL MANAGEMENT OF RENAL CARBUNCLE

REPORT OF A CASE

Harold W. Bruskewitz, M.D., Bellingham, Wash.

The sulfonamides and antibiotics have changed the surgical management of certain diseases. This is especially true in pyogenic processes in the body, where indications and contraindications for surgical intervention and surgical methods have almost reversed themselves since the preantibiotic era.

Ten years ago surgical drainage was required for pyogenic processes of the genitourinary tract. Today, however, with the use of sulfonamides and antibiotics such processes as prostatic abscess, perinephric abscess, and carbuncle of the kidney can frequently be aborted or cured solely by medical means without surgical drainage. Sporadic reports [1] regarding this are now appearing in the literature.

Renal carbuncle is a definite clinical entity and is not too uncommon; yet it occurs infrequently enough to be of considerable clinical interest. The efficient antibiotics

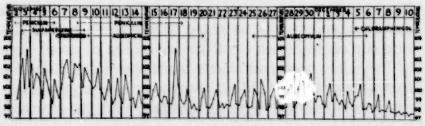

Fig. 1.—Fever chart showing temperature during administration of the sulfonamides and antibiotics.

now available could make this condition a real rarity. Diagnosis will of necessity have to be made on supposition as long as surgical intervention is not used. Certain findings are positive enough to make such a diagnosis possible without surgical biopsy. Urinary studies throughout the course of the disease are of utmost importance. Significance can be attached to negative findings as well as to positive ones.

In the early stages of the disease the urine may be entirely normal, unless the abscess has ruptured into the renal pelvis, when pus and bacteria will be found. Even then the bacteria may be sufficiently devitalized to produce only negative cultures. Smears and cultures may therefore be required repeatedly. Kidney function tests are of no value. Roentgenologic studies, on the other hand, are extremely valuable. Deformity of the calyxes, lack of renal motion during respiration, curvature of the lumbar spine, and loss of psoas shadow on the affected side are definite indications of a pathologic process.

I should like to present my experience with a patient who had a carbuncle in a polycystic kidney and who was cured by the use of the new drugs now available for the treatment of infections of the urinary tract.

REPORT OF CASE

M. E., a white woman, 37, was admitted to the Methodist Hospital, Madison, Wis., on Nov. 1, 1949, complaining of weakness and pain in the middle of the back for two days. This pain and tenderness had gradually shifted until on admission it was present in the lower right abdominal quadrant. There were no associated symptoms, and a review by systems disclosed no abnormal conditions otherwise. There was no history of recent skin infection, boils, or respiratory infection.

Physical examination revealed a patient in mild distress with a temperature of 99 F. Positive findings were limited to the abdomen, where there was moderate tenderness in the right flank and lower right quadrant. A provisional diagnosis of appendicitis was made, but disease of the right kidney was to be ruled out. The initial urinalysis showed an acid urine which was loaded with pus and blood cells. Urine and blood cultures showed no growth. Agglutination tests were negative. The white blood cell count was 12,650, with 72% polymorphonuclear leucocytes. The nonprotein nitrogen was 40 mg. per 100 cc. A chest roentgenogram was normal.

During the first week in the hospital the patient was thought to be suffering from acute pyelonephritis of the right kidney. When she did not respond to the usual form of treatment, urologic consultation was requested. Intravenous urograms suggested polycystic renal disease in the left kidney, but the right kidney was not visualized sufficiently for diagnosis.

Fig. 2.—Retrograde pyelogram taken on Nov. 11, 1949, showing bilateral polycystic renal disease with carbuncle of the right kidney, indicated in right calyces by the arrows.

Retrograde pyelograms on Nov. 11 revealed bilateral polycystic renal disease with additional deformity in the lower right calyx suggestive of carbuncle (Fig. 2). Indigo carmine appeared in five minutes from the left kidney and in nine minutes from the right. The urine from the bladder was loaded with pus and blood cells. The urine from the right kidney presented similar findings, while the urine from the left kidney was normal. Cultures of the urine from the right kidney showed Gram-negative bacilli belonging to the coli-aerogenes group, and there was no growth in cultures of the urine from the left kidney.

The patient's temperature, ranging from 99 to 104 F., remained elevated for 37 days.

From the Department of Urology, Jackson Clinic, Madison, Wis.

1. McAllister, R. W., and O'Conor, V. J.: The Effect of Penicillin in Carbuncle of the Kidney: A Case Report, S. Clin. North America **25**: 210-218, 1945. Welch, N. M., and Prather, G. C.: Renal Carbuncle (Staphylococcal Abscess of the Kidney), J. Urol. **62**: 646-650, 1949.

Sulfonamides and antibiotics were given for the periods illustrated in Figure 1. The doses usually recommended for infections of the urinary tract were used. The urine was still loaded with pus cells on Nov. 25. Cystoscopic examination and retrograde pyelograms were repeated on Dec. 7 and, although the picture of polycystic renal disease persisted, there was a marked change in the pyelogram of the right kidney shown in Figure 3 as compared with that in Figure 2. At this time the urine from the left kidney was again normal and that from the right kidney showed 8 to 10 white blood cells per high power field. Cultures of urine from both kidneys showed no growth. Indigo carmine appeared in normal time from both kidneys.

Since the patient was asymptomatic, she was discharged from the hospital on Dec. 10.

She was maintained on gantrisin* (3,4-dimethyl-5-sulfanilamide isoxazole) at home for one week. For a month she took her temperature at home every four hours, and it remained normal. The urine became normal and has remained so. A civil service examination on March 22, 1950, showed no infection of the urinary tract. She has remained well to the present time.

Fig. 3.—Retrograde pyelogram taken on Dec. 7, 1949, showing bilateral polycystic renal disease.

COMMENT

No question arises as to the presence of bilateral polycystic renal disease in this patient. Whether or not an abscess or a carbuncle existed in some of the cysts is left to supposition. Positive findings suggesting such a diagnosis are: (1) the distortion present in the right kidney as shown in the pyelogram, which disappeared after a course of various therapeutic drugs; (2) the febrile reaction; (3) the presence of infected urine, which cleared up under therapy; (4) the complete disappearance of all signs and symptoms of renal carbuncle.

One may wonder whether a cure would have been effected more quickly with surgical drainage of the abscess. This patient had a severe renal condition and was able to return to full employment in 37 days. I do not believe this could have been accomplished faster by surgical intervention, an opinion based on personal experience using surgical drainage in both carbuncle of the kidney and perinephric abscess. Certainly the dangers attending any surgical procedure were not present.

Well illustrated is the fact that various types of sulfonamides and antibiotics may be required during the course of prolonged urinary infection as the organism becomes resistant to the drug being used.

SUMMARY

A case of carbuncle of the kidney in a patient with polycystic renal disease is presented. A clinical cure was effected by the use of sulfonamides and antibiotics. Pyelographic evidence to support the diagnosis is presented. There was no recurrence in a follow-up of over a year.

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SELF-RETAINING ELECTROCARDIOGRAPHIC ELECTRODE

William Welsh, M.D., Rockville, Md.

The need for a chest electrode which would remain in place without being held by the physician or his assistant has been apparent for a long time. Sandbags of various shapes, elastic bands, weighted straps, and a rubber suction cup enclosing an electrode have been devised. None of these has been completely satisfactory and none has had widespread use. Most physicians have continued to prefer to hold, or to have an assistant hold, the electrode in place.

The elastic straps used to hold the limb electrodes have not, apparently, caused much concern. Although they are untidy and clumsy to apply and often cause discomfort, they have been accepted as necessary without much thought having been given to the problem.

The obvious need for a simple, all-purpose electrode led me to design the self-retaining electrode described in this paper. A supply of these electrodes was made [1] and found to be so satisfactory that in June, 1950, some were given to the Heart Station of Georgetown University Hospital and to several other local hospitals for clinical trial. Although conventional electrodes are still available at these places, the use of the new ones has become routine. It is felt that they are a significant advance in the technique of electrocardiography.

DESCRIPTION

The electrode consists of a cup, a spherical rubber bulb, a short metal connecting tube, and a binding post. It is a compact unit, airtight, rigid except for the bulb, easily handled and applied with one hand. The cup is made of German silver, shaped as a segment of a sphere, with an opening 3 cm. in diameter and a depth of about 1.25 cm. It has a smooth, noncutting edge. At its pole is a short metal tube, to which the binding post is

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From the Department of Medicine, Georgetown University Medical Center, Washington, D. C.

1. Bowen and Company, Inc., 4712 Bethesda Ave., Bethesda, Md., surgical instrument manufacturing company, now has the self-retaining electrode in stock.

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attached, and on which the rubber bulb is fitted. The capacity of the bulb is more than twice the capacity of the cup; at present a ½-oz. (15 cc.) B. D. Aspeto® bulb is used.

METHOD OF USE

The electrodes are fastened to the lead wires of the electrocardiograph. The site of contact is prepared in the usual manner by application of electrode paste and by firm scraping with a tongue depressor. An electrode is picked up with one hand, its bulb compressed at the top by the thumb, its opening applied firmly to the prepared skin, and the bulb released. Except in the special circumstances to be mentioned it will adhere firmly. Visible evidence of satisfactory and constant adhesion will be given by the bulb, which, so long as suction persists and remains constant, will remain partially collapsed in constant degree.

When all desired records are completed one may remove the electrodes, bearing in mind that it is desirable to compress the bulb before removing. The electrodes may be left attached to the lead wires, wiped clean of excess paste, and used immediately on another patient.

A self-retaining electrode may be used as a chest electrode in conjunction with the conventional limb electrodes. It is as a chest electrode that it is most desirable and useful, although there are many advantages to its use as a limb electrode.

SPECIAL CIRCUMSTANCES

Although the self-retaining electrode will, in general, give better electrical contact than will the standard electrode, and will almost always adhere without special precautions, there are two conditions which may cause difficulty. The first of these is the presence of a more than usual amount of hair; the second is loss of elasticity of skin and underlying tissue.

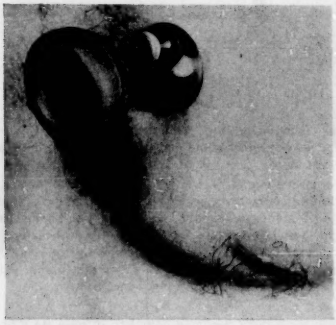

Fig. 1.—Self-retaining chest electrode held in place by suction.

Hair will cause an imperfect seal between skin and electrode only if strands cross the rim of the cup sufficiently bunched so that electrode paste cannot obliterate the airways at their sides. It is usually easy to press the chest and limb hair to the side; first by tongue depressor and paste, later by rotation of the electrode cup. If the chest electrode will not adhere in spite of this precaution, it may be held in place just as the conventional electrode is now. Even though skin is not drawn into the cup adequate electrical contact is made by the rim.

On the limbs it is usually possible to avoid a hairy area. Since the limb potential is the same everywhere, the selection of the site of application depends on the convenience of the operator and patient. It is not necessary, as it is when using straps, to select a site which may be encircled easily. It has become usual to apply the electrode over the deltoid and, depending on how the patient is dressed, either over the inner surface of the calf or over the anterior thigh just above the knee.

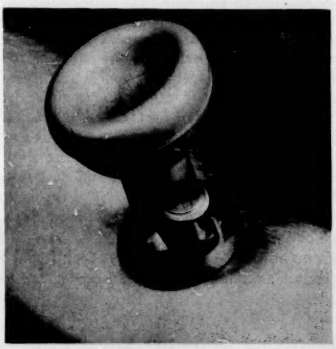

Fig. 2.—Self-retaining electrode used as an arm electrode.

If the patient is unusually emaciated it sometimes happens that the skin is drawn completely into the cup without giving adequate adhesion. If no part of the limb can be found at which this will not occur (and it should be remembered that the palms and soles may be included in the search), adhesion can still be obtained by drawing the skin taut with a band of adhesive encircling the limb from one side to the other of the site of application.

ACCURACY

As the self-retaining electrode presents a circular area of contact 3 cm. in diameter it subtends the same angle as does the standard chest electrode and, from a mathematical point of view, should give precisely the same results. It has been found that this is true, as records obtained are, in all respects, identical. The question of accuracy does not arise with regard to the limb electrode.

ADVANTAGES

All the advantages of this electrode are apparent only after it has been used for a time; its usefulness to the physician without an assistant is obvious. In the Georgetown Heart Station the taking of an electrocardiogram formerly required two persons. Now the nurse is free for other duties. This is the usual experience. Records are, in general, more free of artifacts and base line wandering. Interference from alternating current is reduced. The patient is more comfortable; there is no constriction of the limbs or undue pressure on the chest. The electrode can be used in spite of amputations or dressings. It is neat and clean and does not offend the fastidious.

SAFETY

Several thousand applications have been made to more than 1,000 patients. The imprint of the ring and a slight erythema are the usual limit of trauma. These disappear quickly, even over an area of pitting edema. One patient, who had purpura, had moderately severe bruising. Petechiae are sometimes found but are inconsequential.

The extent to which skin and tissue can be deformed is limited by the depth of the cup. After the cup is filled no increase in suction will have any effect on tissue except over the small opening of the connecting tube. Therefore, the amount of trauma due to either deformation or suction is limited by the cup depth. The cup depth of less than a hemisphere was selected for two reasons: 1. It was found to be a mean between the least depth which will give adequate adhesion and the most depth which will not cause discomfort. 2. The rim is not perpendicular, and the bend in the skin at the edge of the cup is at an obtuse angle.

The cup at this selected depth has been found to give a degree of adhesion which is adequate, comfortable and safe.

SUMMARY

A self-retaining suction grip electrode for use in electrocardiography has been described.

It is found to have advantages over existing electrodes which warrant its widespread distribution and use.

3900 Reservoir Rd., N.W., Washington 7, D. C.

SCALENUS ANTICUS SYNDROME CAUSED BY TRICHINOSIS

Duane R. Taylor, M.D.
Andrew M. Moore, M.D., Jefferson Barracks, Mo.
and
Henry Schwarz II, M.D., Pittsburgh

Trichinosis is at least as deserving of the term "protean" as is syphilis. Since its description by Sir James Paget in 1835, a vast array of signs, symptoms, and disease syndromes have been traced to the presence of the pathogenic Trichinella nematode. The clinical course of trichinous infection is seldom "typical," and the diagnosis in sporadic cases is more often established by the pathologist than by the clinician. Hall listed 50 diseases that have been mistakenly diagnosed in patients infected with T. spiralis,[1] and Gould, in his comprehensive monograph, has added many more to this list.[2]

For two reasons we wish to report a case of scalenus anticus syndrome caused by trichinosis: 1. To our knowledge this particular syndrome has not been previously reported to result from infestation with trichinae. 2. It seems worthwhile to reemphasize that sporadic trichinosis should be considered in differential diagnosis of any neuromuscular syndrome of obscure origin or with atypical manifestations, especially if accompanied with eosinophilia.

From the Veterans Administration Hospital, Jefferson Barracks, Mo. Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

1. Hall, M. C.: Studies on Trichinosis: III. Rôle of Garbage-Fed Hog in Production of Human Trichinosis, Pub. Health Rep. 52:873, 1937.

2. Gould, S. E.: Trichinosis, Springfield, Ill., Charles C Thomas, Publisher, 1945.

REPORT OF A CASE

History.—The patient, a Negro laborer aged 38, was admitted to the medical service of Jefferson Barracks Veterans Administration Hospital on Aug. 9, 1950, complaining of backache and pain in the left hand. While stationed in India during World War II, there had developed in the patient arthralgia of the hip, knee, and hand on the left side; the arthralgia was unaccompanied with swelling, redness, local heat, or fever. He was hospitalized for 11 months. After discharge from the Army the patient was in good health until six months prior to his admission to this hospital. At that time he began to experience constant low back pain, gradually increasing in severity. He also complained of vague inconstant pain in the left thumb and elbow. He lost about 15 lb. (6.8 kg.) in weight.

Physical Examination.—The patient was a well-developed, well-nourished man in no acute distress. Small, discrete nontender lymph nodes were palpable in the anterior and posterior cervical chain bilaterally. Tenderness was elicited by pressure over the lower lumbar spine and the metacarpophalangeal joint of the left thumb.

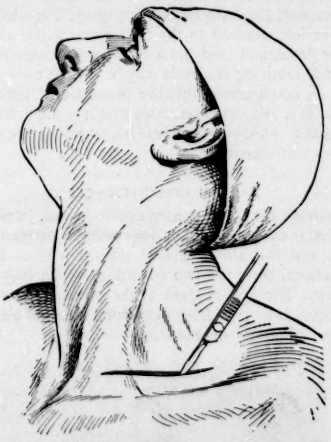

Fig. 1.—Approach to the left scalenus anticus muscle.

Laboratory Findings.—The white blood cell count was 9,800; the Schilling count revealed 47 segmented neutrophils, 39 lymphocytes, 5 monocytes, and 9 eosinophils. The hemoglobin was 15.7 gm. per 100 cc. Routine urinalysis was negative except for a trace of albumin. The chest roentgenogram was negative, and anteroposterior and lateral views of the lumbar spine revealed only moderate hypertrophic osteoarthritis.

Hospital Course.—After he had been in the hospital about one week the patient began to complain of pain starting in the left side of his neck and radiating down the left arm into the hand. Examination revealed a considerable decrease of strength in the left hand when compared with the right. There were spotty areas of hypesthesia and anesthesia to pinprick and light touch over the left hand and forearm; these sensory disturbances did not conform to any anatomical nerve pattern. No appreciable difference in the quality of the radial pulsations was noted.

The blood pressure in the right arm, however, was found to be 160 mm. of mercury systolic and 125 mm. of mercury diastolic, while in the left arm it was 130 mm. of mercury systolic and 105 mm. of mercury diastolic. An indefinitely outlined, very

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slightly tender mass was palpable in the left supraclavicular fossa. The examiners were uncertain as to whether this represented an enlarged scalenus muscle or a mass underlying the scalenus muscles. No bruit was heard on auscultation over this area, nor could any pulsations be palpated. Detailed roentgenographic examination of the cervical spine and left shoulder girdle revealed nothing abnormal except very early osteoarthritic changes in the cervical spine. No cervical ribs were observed.

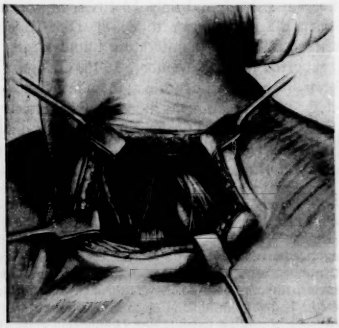

Fig. 2.—The muscle is exposed, revealing the body of the muscle studded with parasites.

These findings were reviewed by the surgical and medical services, and the working diagnoses considered were (1) scalenus anticus syndrome or (2) compression of the left brachial artery and plexus by a mass either neoplastic or inflammatory in origin. Exploration of the left supraclavicular fossa was advised.

With the patient under endotracheal ether anesthesia, a left lateral transverse incision was made at the base of the neck. The sternocleidomastoid muscle was retracted medially and the scalenus anterior muscle exposed. The muscle in its distal one-third was found to be firm, thickened, and fibrotic. On its surface, and within the depths of the cut muscle surface, numerous small, discrete, yellow, oval flecks were clearly visible (Fig. 1, 2, and 3). The muscle was divided transversely, and a segment was excised to relieve pressure on the subclavian artery and brachial plexus. The postoperative course was uneventful, and the patient no longer complained of pain radiating into his left arm.

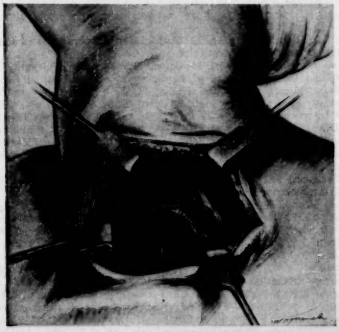

Fig. 3.—The muscle has been excised after the phrenic nerve has been dissected free and retracted medially, exposing the subclavian artery.

Microscopic examination of the specimen of scalenus anticus muscle revealed numerous encysted larvae of Trichinella spiralis, with considerable fibrosis of surrounding muscle fibers (Fig. 4 and 5).

One month after the operation the patient returned to the hospital because of acute tonsillitis and pharyngitis. They responded quickly to penicillin and warm saline irrigations. The operative incision was well healed and he had no complaints referable to the left upper extremity. Areas of sensory deficit were no longer demonstrable in the left forearm and the grip strength of the left hand had improved. While the patient was in the hospital a biopsy of the right deltoid muscle was obtained; it also was found to contain encysted trichinae.

Despite repeated questioning we were unable to obtain from the patient a history of having at any time eaten raw or partially cooked pork or pork products.

Fig. 4.—Low-power photomicrograph demonstrating an encysted parasite. The increase in fibrous tissue between the muscle bundles can be noted.

COMMENT

Although in the encysted stage trichinae are confined to skeletal muscle, the migrating larvae may invade many organs and tissues. They have been found in the heart, lungs, gallbladder, pancreas, kidneys, small bowel, peritonsillar tissue, brain, and cerebrospinal fluid.[3] Central nervous system involvement, with its resultant symptoms of apathy or restlessness, delirium, absence of tendon reflexes, areas of hypesthesia or anesthesia, and paresthesias, has been reported often, particularly in severe

3. Horlick, S. S., and Bickness, R. E.: Trichiniasis with Widespread Infestation of Many Tissues, New England J. Med. **201**: 816, 1929. Mauss, E. A., and Otto, G. F.: The Occurrence of Trichinella Spiralis Larvae in Tissues Other Than Skeletal Muscles, J. Lab. & Clin. Med. **27**: 1384, 1942. Meeker, L. H.: Unusual Lesions of the Nose and Throat Including Trichinosis of the Tonsils, Laryngoscope **38**: 503, 1928.

cases. An occasional case mimics acute encephalitis, cerebral vascular accident, or a demyelinating process such as multiple sclerosis.[4] In the case reported here, however, the symptom complex did not arise because of direct involvement of nerve tissue, but indirectly because of pressure on peripheral nerves by the parasitic type of myositis. A search of the literature brings to light only one case in which a similar mechanism was in operation in a case of proved trichinosis. In 1946 Cohen reported a case of meralgia paraesthetica resulting from pressure on the lateral femoral cutaneous nerve by a fibromuscular band that compressed the nerve against the anterosuperior iliac spine. This fibromuscular band was actually a portion of the sartorius muscle, which was heavily infested with trichinae and in which considerable fibrous replacement of muscle fiber had occurred. Excision of this band resulted in complete eradication of the paresthesia.[5]

In our case, although doubtless many muscles were involved (as indicated by a positive biopsy from the deltoid), the significant involvement was of the left

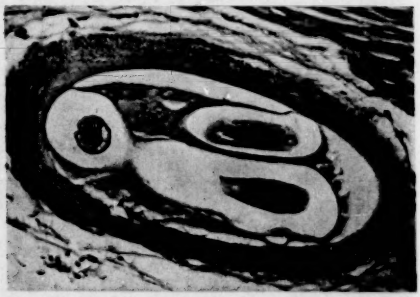

Fig. 5.—High-power photomicrograph of an encysted parasite.

scalenus anticus muscle. This was proved when surgical excision of the distal involved portion of that muscle resulted in complete relief of both symptoms and signs.

Although the correct anatomic site of disturbance was given consideration in the preoperative differential diagnosis, the underlying etiology was not suspected prior to surgical exposure of the diseased muscle. Undeniably more curiosity should have been aroused by the 9% peripheral blood eosinophilia.

SUMMARY

A case of scalenus anticus syndrome caused by trichinosis is presented.

The protean nature of trichinosis and the desirability of considering it in the differential diagnosis of neuromuscular disturbances is reemphasized.

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RUPTURE OF THE INTERVENTRICULAR SEPTUM DIAGNOSED ANTE MORTEM

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Rupture of the interventricular septum is not a common occurrence. Edmondson and Hoxie [1] in 25,000 consecutive autopsies found only 13 cases, of which three had been diagnosed prior to death. Diaz-Rivera and Miller [2] on reviewing the literature found a total of 37 cases reported up to November, 1946. Of these, seven had been diagnosed ante mortem, including the case they reported. Two cases not included in this series are reported by Freeman and Griffen.[3] Neither was diagnosed ante mortem. This unusual condition has also attracted the attention of other clinicians.[4]

REPORT OF A CASE

A white man, aged 54, entered the Evanston Hospital Feb. 13, 1950. He had had no preceding difficulty and felt well until the evening of admission. He had a Martini cocktail before dinner, and 25 minutes after dinner went out to shovel snow for about 15 minutes, stopping because he was through with the job. By the time he had gone inside and up to his third floor apartment, he broke out in profuse perspiration without any chill. He also developed a feeling of "lameness" in his chest localized in a vertical band substernally and parasternally. He had no dyspnea or sharp pains. However, he was slightly nauseated and regurgitated a tablespoon of white curdled material. He then had a normal bowel movement.

He was seen at home shortly afterward. He appeared pale and jocularly apprehensive. His skin was cold and clammy. He was perspiring profusely. His pulse was regular at 92 beats per minute, and his temperature was 98.8 F. The blood pressure was 166/100. Examination of his heart revealed no enlargement, murmurs, friction rubs, or thrills. The remainder of his examination was essentially normal. The tentative diagnosis was myocardial infarction. He was given 15 mg. morphine sulfate, (¼ grain) and 0.4 mg. atropine sulfate (1/150 grain), hypodermically, and 0.25 gm. aminophylline (3¾ grains) intravenously. He was sent into the hospital, where oxygen administration was imme-

Dr. L. D. Snorf and Dr. E. G. McEwen encouraged and assisted in the preparation of this manuscript.

From the Department of Medicine, Northwestern University Medical School, and the Department of Medicine, Evanston Hospital.

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diately started. Because of persistent cyanosis and dyspnea, it was necessary to continuously administer oxygen. He vomited several times during the first 24 hours, and perspired profusely throughout his entire hospital stay. Bishydroxycoumarin (dicumarol®) was given daily.

During the next five days a mild fever developed which persisted. Penicillin therapy was started. A friction rub was heard, after which the heart tones became less audible. The impression was that a pericardial effusion with adjacent pleurisy and possible compression atelectasis had occurred. The patient was exquisitely tender along the fourth to sixth left intercostal nerve.

On Feb. 18 his blood pressure was 128/90. The friction rub was gone, and the heart tones were more audible. That night the patient vomited and was very restless. At 1 a. m. the following morning he complained of a little of the same "lameness" in his chest. He spent a very restless night, but by 8 a. m. his distress was gone. Physical examination on the morning of Feb. 19 revealed a loud systolic blowing murmur over the apex and along the left costal margin. Since this had not been present before and had occurred suddenly with chest distress, it was believed to represent a rupture of the interventricular septum. This occurred five and one-half days after the myocardial infarction.

On Feb. 19 and 20 his blood pressure remained around 134/92. On Feb. 21 it dropped to 110/76, in which area it remained. The pulse rate, which had varied from 70 to 110 beats per minute with frequent premature ventricular contractions, uncontrolled by quinidine, before the rupture of the interventricular septum, afterwards varied between 52 and 140 beats per minute with occasional irregularities.

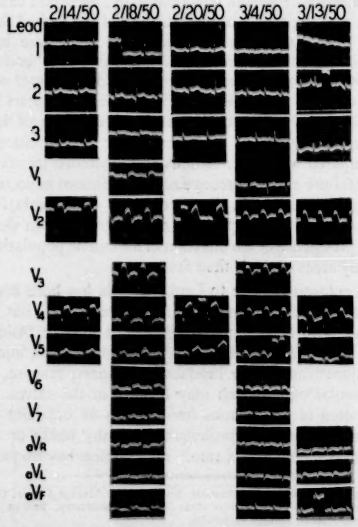

Fig. 1.—Electrocardiograms of patient with ruptured interventricular septum.

By Feb. 22 the systolic murmur was audible from the left posterior axillary line across the anterior chest to the right axillary line. It was loudest in the fourth interspace just to the left of the sternum. It was almost as loud just to the right of the sternum. It was not audible posteriorly. On March 3 he was started on digitoxin and aureomycin therapy, but these were ineffective. On March 12 the patient had an attack of acute left ventricular failure.

The following day the patient had a generalized tonic convulsion with arched back and was immediately given 0.25 gm. (3¾ grains) of aminophylline and 10 mg. (1/6 grain) of morphine intravenously. Afterwards the patient was well oriented and spoke of appreciation of the doctor's efforts. It was felt that the convulsion was due to cerebral anoxia. Another convulsion occurred that evening, and the patient died an hour later, exactly one month after his acute myocardial infarction, and 22 days after perforation of the interventricular septum.

Fig. 2.—Postmortem appearance of the heart.

Laboratory Findings.—On Feb. 24 the patient's white blood cell count was 19,200, with 70% polymorphonuclears, 17% staff forms, and 13% lymphocytes. The corrected sedimentation rate was 9 mm. per hour (Wintrobe). A portable chest film on March 3 suggested congestive failure in addition to a consolidation in the middle third of the right lung. The electrocardiograms (Fig. 1) are of some interest. It will be seen that early the findings suggestive of a pericarditis tend to obscure those of the myocardial infarction. The rupture of the interventricular septum occurred between the tracing of Feb. 18 and that of Feb. 20. It will be observed that on Feb. 20, 1950, R_1 is somewhat lower, S_1 is present, and R_3 is higher than on Feb. 18, 1950. However, comparing the electrocardiogram of Feb. 20 with that of Feb. 14, 1950, these changes did not appear to be significant. Neither was any significant change present in the tracing of Feb. 28. However, by March 4, S_1 had become deeper at the expense of R_1, and the augmented limb leads confirmed the appearance of a vertical electrical axis. This was interpreted as due to a sudden increase in the right circuit load, almost certainly resulting from the rupture of the interventricular septum. The electrocardiogram of March 13 was taken on the day of his death.

Postmortem examination revealed that the heart weighed 460 gm. and the orifices of the valves were of normal size (Fig. 2). The following is the report of Dr. John McCarter, pathologist:

The transcardiac diameter measures 14 cm., while the transthoracic measures 27 cm. The external surface of the heart shows a moderate amount of subepicardial fat. Its surfaces are smooth and glistening except over the apical portion of the left ventricle,

where is seen the remains of pericardial tags. Over the anterior and apical portions, extending through approximately 2 cm. of the posterior wall there is seen a red to pink to purple discoloration and marked thinning of the muscle wall. This area measures approximately 8 by 10 cm. Upon cutting into the chambers, the endocardium takes on a rather shaggy appearance, being opaque and mottled pink to red in color. There are scattered irregular areas of yellowish material which can be seen beneath the endocardium. In the involved portion of the myocardium of the left ventricle, the muscle wall is found to be thinned to 0.3 cm., and the cut surface at this area shows almost complete replacement by reddish mucoid material with strands of fibrous tissue interspersed. The thinning of the myocardium is extended up the septum, and in its midportion there is noted a septal perforation measuring 3 by 2 cm. with a 1 mm. strand of endocardium across its center. No interauricular septal defect is noted. There is minimal fibrous thickening with some nodularity of the free edge of the mitral valve, and the aortic valve shows slight thickening at the base of the cusps. There are scattered atheromatous plaques in the first portion of the aorta and around the aortic sinuses.

Both coronary ostia are markedly narrowed. There are moderate sclerotic changes of both coronary arteries and their branches, but more evidenced by distinct narrowing of the posterior descending branch of the right coronary. Six centimeters from its origin there is what is believed to be a recent thrombus.

Multiple sections through the myocardium reveal almost entire replacement of the muscle by a yellow friable necrotic tissue surrounded by a zone of congestion. This infarction involves the entire interventricular septum and anterior surface and apex of the left ventricle. The periphery of the above-mentioned perforation is composed of such tissue. There is also concomitant thinning of the myocardium in the involved portions.

COMMENT

The diagnosis of rupture of the interventricular septum may not be difficult if the possibility is kept in mind. A ruptured papillary muscle may give similar findings and be indistinguishable from it, however. The sudden appearance of a harsh systolic murmur several days after the onset of an acute myocardial infarction strongly suggests the occurrence of a ruptured interventricular septum. The day of onset of the septal rupture seems to vary considerably. In the case described by Diaz-Rivera and Miller [2] it occurred two days after the infarct occurred. In that of Wood and Livezey [4a] it is implied the perforation occurred five weeks after the myocardial infarct. It is reasonable to suppose, however, that the perforation is most apt to occur during the first two weeks after myocardial infarct.

This patient survived exactly one month after an acute myocardial infarction and 22 days after perforation of the interventricular septum. The length of time other reported cases have survived perforation of the interventricular septum varies from five and one-half hours [3] to almost five years,[4a] this latter patient being in chronic cardiac failure during the five-year period.

The most important finding in arriving at a diagnosis of ruptured interventricular septum is the murmer. The most important aspect of the murmur is its sudden onset. Its characteristics vary greatly, but it is usually described as a harsh systolic murmur accompanied with a rough systolic thrill. It apparently may radiate to any portion of the chest. In this case the blood pressure and pulse were of no value in diagnosing the rupture. Initially, the electrocardiogram was of little value in arriving at this diagnosis. However, between 10 and 13 days after the perforation, the electrocardiogram showed evidence of an increased load in the right cardiac circuit. Thus, in the course of treating a patient with an acute myocardial infarction, when an acute cor pulmonale pattern occurs in the electrocardiogram, rupture of the interventricular septum must be considered as well as a pulmonary infarct. The appearance of the murmur, of course, makes differentiation usually simple.

SUMMARY

A case of rupture of the interventricular septum is presented. The rupture occurred five days after an acute myocardial infarction, and the patient died 22 days later.

636 Church St.

AUREOMYCIN AND PENICILLIN THERAPY IN CANICOLA FEVER

REPORT OF A CASE

Major James F. Stagg (MC), United States Army
and
Major Albert Leibovitz, Medical Service Corps, United States Army, Fort Sam Houston, Texas

Reports of human infections with Leptospira canicola are rare, especially in the literature of the United States. In 1946 Rosenbaum [1] reported the sixth case in the United States. More recently, Minkenhof [2] compiled from the world's literature a total of 98 cases, of which seven were from this country. Molner and others [3] described the disproportionately low incidence of leptospiral infections of all types in the United States as compared with other nations and attributed this fact to the failure either to recognize these diseases or to report diagnosed cases. In a consideration of canicola fever, these assumptions appear to be well grounded in view of the prevalence of the infection in the canine population of many areas of the United States.[4]

Leptospirosis due to Lept. canicola has been considered a relatively benign disease in the human, but fatal cases have been reported.[5] Its onset may be insidious but usually is sudden, with a high temperature, injected conjunctivas, severe headache, dizziness, malaise, and muscular pains which may localize in the calves. The duration of fever varies from two to 48 days but convalescence may be prolonged for many weeks or even months.[2] Jaundice is rare.[6] This disease has frequently

From Brooke General Hospital, Brooke Army Medical Center, (Major Stagg) and the Fourth Army Area Medical Laboratory, Brooke Army Medical Center, (Major Liebovitz).

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6. Rosenbaum.[1] Minkenhof.[2]

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been misdiagnosed as influenza, typhoid fever, Q fever, and tuberculosis.[7] It is particularly likely to cause symptoms referable to the central nervous system; and since pleocytosis may occur, the disease may be confused with the various forms of "aseptic" meningitis.

The following case is reported for the purpose of calling attention to a disease often overlooked and suggesting that aureomycin may well prove to be of distinct value in treatment.

REPORT OF CASE

History.—A 29-yr.-old white male officer entered Brooke General Hospital on Jan. 30, 1950, with a history of sudden onset, 24 hr. previously, of generalized aching, arthralgia, malaise, fever, and slight burning on urination. His oral temperature had risen to 103 F. while he was at home. Shortly after the onset of these symptoms, the patient took ½ oz. (15 cc.) of castor oil, which was followed within 12 hr. by the passage of watery stools without blood or mucus. On the day of his admission to the hospital, burning of the eyes, sore throat, and a slight stiffness of the neck were present. There was, however, no headache, and the patient did not note any nausea or vomiting. Cough and chest pain were absent.

The officer, a resident of San Antonio, Texas, was an administrative worker in the Fourth Army Area Medical Laboratory at Fort Sam Houston. The position entailed frequent visits to the bacteriological and viral sections of the laboratory but no direct contact with specimens, cultures or experimental animals. There were no cultures of Leptospira in the laboratory at that time.

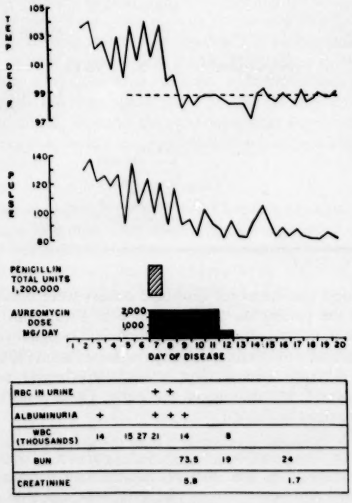

Fig. 1.—Effect of aureomycin-penicillin therapy on the clinical findings in a case of canicola fever.

Questioning concerning animal contacts revealed that the patient had purchased a six-week-old English bulldog male puppy from a local kennel two months before. Two weeks before the patient became ill, this dog had died after a three-day illness characterized by lethargy, a refusal to eat and bloodshot eyes. Because of a suspicion of poisoning, the animal was autopsied by a veterinarian, who stated that the stomach was hemorrhagic. Toxicological studies revealed no evidence of the common poisons. The organs unfortunately were destroyed.

Before its death, the animal had been cared for by the patient, who on several occasions had wiped up the dog's urine that had been passed in the home. In addition, the patient had been bitten by the ill animal on the forefinger of his right hand approximately 15 days before the onset of his illness.

Physical Examination.—On admission examination revealed an obese white man, acutely ill, with flushed facies and hot dry skin. The oral temperature was 103.4 F. and the radial pulse

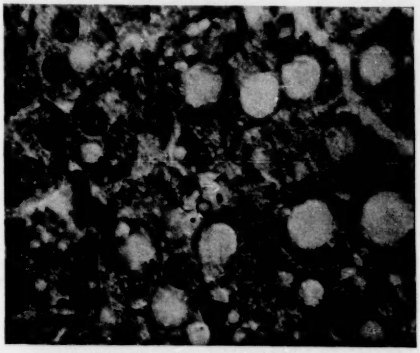

Fig. 2.—Leptospira canicola in the liver of a guinea pig.

rate, 130 per minute. There were no lesions on the skin nor was icterus present. The conjunctival membranes were normal. There was slight nuchal rigidity but no Kernig's sign. The chest was clear and the heart was normal on examination except for tachycardia. The liver and spleen were not enlarged. A complete neurological examination was done without abnormal findings.

Laboratory Studies.—At the time of admission a serologic test for syphilis (V. D. R. L. [Venereal Disease Research Laboratory] and cardiolipin complement-fixation test) was negative. Results of urinalysis were normal. Dark-field examination for spirochetal organisms was not done on admission. The white blood cell count was 14,050 with 96% polymorphonuclear cells, 55% of which were of the band variety. The red blood cell count was 4,200,000. The corrected sedimentation rate was 32 mm. per hour (Wintrobe). A blood smear for malarial parasites was negative and a blood culture was later reported as showing no growth. Spinal fluid examination revealed a cell count of two; sugar, 96 mg. per 100 cc.; total protein, 50.5 mg. per 100 cc., and globulin value, negative. A roentgenogram of the chest on the third hospital day showed generalized accentuation of the lung markings with a cottony appearance such as is commonly seen in pulmonary congestion.

Hospital Course.—No specific therapy was immediately instituted. The patient continued a febrile course with increased pulse rate and leucocytosis of the left-shift variety (Fig. 1). On the sixth day of his illness, a guinea pig was inoculated intraperitoneally with 5 ml. of the patient's venous blood for leptospiral studies. On the seventh day of his illness a pronounced conjunctival injection appeared and his urine was found to be grossly red in color, containing numerous erythrocytes. The urinary output, which had been previously maintained at normal levels, dropped to 570 ml. in the 24-hr. period. Subsequently a 12-hr. period of anuria ensued. The blood nonprotein nitrogen was later found to be 73.5 mg. per 100 cc. and the creatinine 5.8 mg. per 100 cc. (Fig. 1).

Since the diagnosis was still questionable and the patient appeared to be in grave condition, aureomycin and penicillin therapy was commenced on the seventh day. Aureomycin, in

7. (*a*) Minkenhof.[3] (*b*) Mackay-Dick, J., and Watts, R. W. E.: Canicola Fever in Germany: Report of 6 Cases, Lancet **1**: 907 (May 28) 1949. (*c*) Meyer, K. F.; Stewart-Anderson, B., and Eddie, B.: "Canicola Fever": A Professional Hazard, J. Am. Vet. M. A. **93**: 332 (Nov.) 1938.

500-mg. doses, was administered every six hours for 126 hr. Penicillin, in 600,000-unit doses, was administered twice in 18 hr. and then discontinued because of the appearance of an urticarial type of skin rash. On the day after the institution of therapy the patient showed marked improvement and stated that he felt well enough to go home. His urinary output once again became normal. On the second day after therapy, his temperature and pulse rate fell to normal levels. From this time on the patient had no further complaints. The conjunctival injection, which had comprised the only definite abnormal physical finding throughout the illness, gradually cleared. The white blood cell count rapidly dropped to within normal limits, and the albumin and red blood cells disappeared from the urine. The diagnosis of canicola fever was not definitely established until the 19th day of the patient's illness.

TABLE 1.—*Antibody Response in a Case of Canicola Fever to Various Leptospiras**

Day of Disease	Canicola	Icterohemorrhagiae	Pomona
2†.....	1:10	1:10	1:10
6†.....	1:100	1:100	1:10
8†.....	1:1,000	1:500	1:100
17†.....	1:10,000	1:500	1:50
80†.....	1:5,000	1:50	....
110‡.....	1:10,000	1:100	....

* Microscopic agglutination lysis technique after the method of Schüffner-Mochtar.
† Performed by the Veterinary Division, Army Medical Department Research and Graduate School.
‡ Performed by Dr. Karl F. Meyer, the George Williams Hooper Foundation, the Medical Center, University of California, San Francisco.

IDENTIFICATION OF CAUSATIVE ORGANISM

On the fifth day after 5 ml. of venous blood had been inoculated intraperitoneally into the 300-gm. white guinea pig, its hair appeared ruffled. From then on the guinea pig followed a downhill course, its main symptoms being lethargy and a gradual loss in weight. At no time did it have an abnormally elevated temperature. On the 12th postinoculation day, a definite icterus of the ears, conjunctivas, upper lip, and paws was noted. The animal's temperature had fallen precipitately to 98.1 F. from its normal range of 102 F. to 102.8 F. As the animal was being prepared for blood and urine studies, it suddenly went into collapse and died. Its heart's blood was immediately obtained as well as a small amount of urine that it had passed. Leptospira were demonstrated in large numbers in both specimens under the dark-field microscope.

On autopsy, the following data were observed: deep icterus of the subcutaneous fat; marked adhesions of the small intestines to the peritoneal wall and residual blood clots from the original inoculation; hemorrhages into the walls of the peritoneum; extensive hemorrhage into the entire base and side walls of the stomach; congestion of the liver, spleen and kidneys, and cherry-brown, hemorrhagic areas in the lower halves of all lung lobes.

Sections of the kidneys, liver, spleen, stomach, heart, and lungs, stained by the silver impregnation method of Levaditi, demonstrated Leptospira in all tissues; the liver showed the greatest concentration of organisms (Fig. 2).

TABLE 2.—*Chemotherapy of Canicola Fever with Penicillin and/or Sulfonamides (Literature Review)*

Case	Author	Penicillin, Days of Illness and Dose	Sulfonamides, Days of Illness and Dose	Cure	Relapses	Failure
1	Rosenbaum [1]	12th-18th days* Dose unknown	6th-11th days* Dose unknown	.....	.....	No significant effect on symptoms
2	Baber and Stuart [1c].....	6th-9th days* 220,000 units	.....	.....	68th day*	.....
3	T. St. M. Norris [8b].....	6th-16th days* 2,405,000 units	6th-9th days* 34 gm.	.....	16th day*	.....
4	J. M. Starks [8b].....	.....	3d-8th days* Dose unknown	.....	.....	No response
5	T. St. M. Norris [8b].....	4th-7th days* 2,400,000 units	4th-5th days* 22 gm.	Alleviation of symptoms, 6th day*	.....	.....
6	Weetch and others [8b].....	17th-? days* 120,000 units every 3 hr. Total dose unknown	.....	.....	.....	Patient died on 24th day*
7	Mackay-Dick and Watts, Case 4 [7b].	8th-15th days* 2,300,000 units	.....	.....	17th day* Retreated with penicillin, 60,000 units every 3 hr. 29th-51st days*	.....
8	Mackay-Dick and Watts, Case 5 [7].	9th-12th days* 2,000,000 units	.....	.....	47th and 78th day*	.....

* Days indicated are from the day of onset of illness and are inclusive for days of therapy.

Blood specimens for serologic studies were obtained from the patient on the 2d, 6th, 8th, 17th, 80th and 110th days after the onset of symptoms. A significantly higher titer was obtained for Lept. canicola from the 17th day; the titer against Lept. icterohemorrhagiae never rose over 1:500 throughout the study. These results are summarized in Table 1.

Urine specimens were obtained from the patient on the 8th, 9th, 10th, 18th, 25th, 26th, 43rd, 65th and 90th days after the onset of symptoms with uniformly negative findings under the dark-field microscope. Guinea pigs were inoculated with concentrates of the urine specimens obtained on the 8th, 9th and 25th days with negative findings. At the time that these specimens were obtained, the patient was on an alkaline ash diet.

COMMENT

Until 1946 the therapy of canicola fever was mainly symptomatic. A review of the literature in which specific drug therapy, penicillin and/or the sulfonamides was instituted is summarized in Table 2. The sulfonamides were found to be of no value.[8] In experimental animals, Brunner [9] found that while penicillin signifi-

8. (*a*) Rosenbaum,[1] (*b*) Laurent, L. J. M.; Norris, T. S. M.; Starks, J. M.; Broom, J. C., and Alston, J. M.: Four Cases of Leptospira Canicola Infection in England, Lancet **2**: 48 (July 10) 1948.

9. Brunner, K. T.: Notes on Leptospira Canicola Infection in (Mesocricetus A. Auratus): Pathogenesis, Treatment and Immunity, California Vet. **1**: 18 (July-August) 1948.

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cantly lowers the death rate in hamsters treated before the onset of symptoms, these animals usually tend to become carriers. In his experiments penicillin was of no value after the hamsters showed symptoms of the disease. His experience is paralleled in human infections, for, although several authors have noted a relief of symptoms after penicillin therapy early in the disease,[10] penicillin was of no value when given late in the disease.[11] Moreover, of the patients reported in the literature as having been treated with penicillin, recurrences were noted in all but one (Table 2).

No reports of the administration of aureomycin in human cases of canicola fever were found in the literature. It was noted that Batchelor and Todd [12] had successfully treated a case of Weil's disease with aureomycin and penicillin and had felt that aureomycin was the curative agent. Brunner and Meyer found that aureomycin,[13] as well as streptomycin,[14] not only cured hamsters of Lept. canicola infections but also that both antibiotics prevented the production of the carrier state.

For the purpose of assaying the relative value of penicillin and aureomycin in the present case, it is unfortunate that treatment had to be started empirically before a definite diagnosis had been made and that a combination of the two was employed at first. On the other hand, it is fortunate that penicillin had to be discontinued after 18 hr. of therapy because of allergic manifestations. The short duration of penicillin treatment and the discouraging reports from other authors concerning its effectiveness lead us to believe that the dramatic improvement of our patient probably was a specific response to aureomycin. This experience, together with the proved effectiveness of aureomycin in experimental infections as cited above, indicates the need for further exploration of its possible benefit in other cases of infection with Lept. canicola.

SUMMARY

A case report is presented of a Leptospira canicola infection in a man. Combined penicillin-aureomycin therapy was instituted on the seventh day of illness. Penicillin was discontinued, because of an allergic response, after administration of 1,200,000 units in 18 hr. Aureomycin therapy was continued until the 12th day of illness, by which time 10,500 mg. had been administered. A dramatic alleviation of symptoms was noted within 24 hr., with complete remission of all symptoms within one week after the commencement of therapy. No evidence of relapse or of the production of a carrier state was noted after a 90-day observation period. This clinical result, as well as experimental evidence cited from the literature, indicates that further trial of aureomycin in this infection is warranted.

Brooke Army Medical Center, Brooke Army Hospital.

10. Mackay-Dick and Watts,[7b] Laurent and others,[8b] Baber, M. D., and Stuart, R. D.: Leptospirosis Canicola: Case Treated with Penicillin, Lancet 2: 594 (Oct. 26) 1946.

11. Rosenbaum,[1] Weetch, Colquhoun and Broom.[5b]

12. Batchelor, T. M., and Todd, G. M.: Aureomycin and Penicillin Therapy in Leptospirosis (Weil's Disease), J. A. M. A. 143: 21 (May 6) 1950.

13. Brunner, K. T., and Meyer, K. F.: Effect of Aureomycin on Leptospira Canicola and Leptospira Icterohemorrhagica in Vitro and Experimental Carrier Studies, Am. J. Vet. Res. 11: 89 (Jan.) 1950.

14. Brunner, K. T., and Meyer, K. F.: Streptomycin in the Treatment of Leptospira Carriers, Experiments with Hamsters and Dogs, Proc. Soc. Exper. Biol. & Med. 70: 450 (March) 1949.

ANGIOCARDIOGRAPHY IN OBSTRUCTION OF THE SUPERIOR VENA CAVA

Harold J. Jacobs, M.D.
Louis Levy II, M.D.
Harold Chastant, M.D.
and
Howard Strauss, M.D., New Orleans

With the increased utilization of angiocardiography as a diagnostic procedure, many new routes of administration of iodopyracet concentrated solution [1] have been introduced to obtain more satisfactory pictures. The purpose of this report is to demonstrate a simple route of injection when the superior vena cava is obstructed. In this situation visualization of the cardiac chambers and great vessels cannot be obtained by injecting iodopyracet into the usual site, i. e., veins in the antecubital region.

A. L., a 54-year-old Negro, was admitted on Oct. 3, 1949, because of a superior mediastinal obstruction that produced paralysis of the vocal cords, partial obstruction of the trachea and esophagus, right periocular edema, and cervical lymphadenopathy.

Fig. 1.—Obstruction at the level of the right innominate vein.

Kolmer's test was positive; microscopic study of a cervical node showed tuberculous lymphadenitis; acid-fast stains were positive. Venous pressure was 240 mm. of water in the left arm and 195 mm. of water in the right arm. An injection of iodopyracet concentrated solution into the right brachial vein revealed complete obstruction of the right innominate vein (Fig. 1).

On Oct. 16 the patient died. Autopsy revealed anaplastic bronchogenic carcinoma.

When superior vena cava obstruction is present we have utilized the saphenous vein with the patient in the supine position and have secured satisfactory angiocardiograms by injecting 40 cc. of 70% iodopyracet with a 50-cc. Robb syringe and a 12-gage needle. Exposures are taken at the rate of one per second at 150 ma. and 115 kv. on 70-mm. green-sensitive film utilizing a photofluorographic technique with a Fairchild 70-mm. camera with an Eastman Fluoro Ektar *f*1.5 lens, Patterson-type B-2 screen, and a Super-Dynamax tube.

Two cases will be briefly summarized.

From the Heart Station, Charity Hospital of Louisiana and the Department of Medicine, Louisiana State University School of Medicine.

1. Concentrated Solution Diodrast®, a brand of iodopyracet (70%), was supplied by Winthrop-Stearns, Inc., New York.

REPORT OF CASES

G. P., a 53-year-old Negro, was admitted on Nov. 25, 1949, with a history of nonproductive cough and periodic dyspnea of three years' duration. During the week prior to admission he developed edema of both hands and forearms. He denied any history of penile lesions or therapy for syphilis.

Manifestations on physical examination were as follows: blood pressure (right arm), 134/92-90; distended neck veins; nonpulsating prominence of the manubrial region of the sternum; edema of both upper extremities.

Kolmer's test was positive. Venous pressure was 22 mm. of water in the right arm and 260 mm. of water in the left arm. Fluoroscopy and chest x-rays revealed widening of the superior mediastinal region with a rounded homogeneous density occupying the anterior superior mediastinal region with deviation of the trachea posteriorly.

An injection of 40 cc. of 70% iodopyracet into the saphenous vein demonstrated an aneurysm of the ascending aorta which filled with iodopyracet and displaced the transverse portion of

Fig. 2.—*A*, x-ray prior to injection. *B*, Aneurysm of the ascending aorta, which is filled with contrast medium.

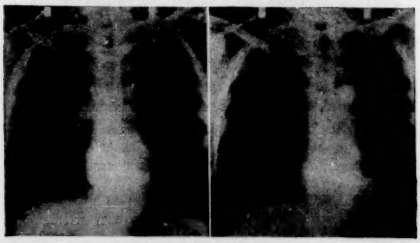

Fig. 3.—*A*, x-ray prior to injection. *B*, The aorta is filled with contrast medium and is seen to be separate from the mass which does not fill with iodopyracet.

the arch of the aorta and the left pulmonary artery inferiorly (Fig. 2). The lateral portion of the mass did not fill with dye, and this probably represented clotted blood.

W. P., a 51-year-old Negro, was admitted on March 22, 1950, because of a superior mediastinal syndrome. Venous pressure in the left antecubital vein was 480 mm. of water. Fluoroscopy and chest plates revealed a superior mediastinal mass extending to the right and posteriorly. A blood Kline test was negative.

A saphenous vein injection of 40 cc. of 70% iodopyracet demonstrated the mass to be separate from the aorta (Fig. 3). Following irradiation there was marked shrinkage of the tumor mass.

SUMMARY

In the presence of obstruction of the superior vena cava, satisfactory angiocardiograms can be obtained by injecting iodopyracet compound solution by the saphenous vein route.

4226½ S. Claiborne Ave. (Dr. Levy).

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Allylbarbituric Acid (See New and Nonofficial Remedies 1951, p. 238).

Powder Allylbarbituric Acid: Bulk; for manufacturing use. Chemo Puro Mfg. Corp., Long Island City, N. Y.

Aminophylline-U.S.P. (See New and Nonofficial Remedies 1951, p. 297).

Tablets Aminophylline: 0.1 gm. Van Pelt & Brown, Inc., Richmond, Va.

Aprobarbital (See New and Nonofficial Remedies 1951, p. 238).

Powder Aprobarbital: Bulk; for manufacturing use. Chemo Puro Mfg. Corp., Long Island City, N. Y.

Aprobarbital Sodium (See New and Nonofficial Remedies 1951, p. 239).

Powder Aprobarbital Sodium: Bulk; for manufacturing use. Chemo Puro Mfg. Corp., Long Island City, N. Y.

Choline Chloride (See New and Nonofficial Remedies 1951, p. 411).

Powder Choline Chloride: Bulk; for manufacturing use. Chemo Puro Mfg. Corp., Long Island City, N. Y.

Diethylstilbestrol Dipropionate (See New and Nonofficial Remedies 1951, p. 345).

Powder Diethylstilbestrol Dipropionate: Bulk; for manufacturing use. Chemo Puro Mfg. Corp., Long Island City, N. Y.

Estradiol-U.S.P. (See New and Nonofficial Remedies 1951, p. 331).

Powder Estradiol: Bulk; 1 gm., 5 gm., and 10 gm. containers for compounding use. Biorganic Laboratories, Inc., Brooklyn.

Estrone-U.S.P. (See New and Nonofficial Remedies 1951, p. 333).

Powder Estrone: Bulk; 1 gm., 5 gm., and 10 gm. containers for compounding use. Biorganic Laboratories, Inc., Brooklyn.

Hexachlorophene (See New and Nonofficial Remedies 1951, p. 52).

pHisoHex: 88.7 cc., 473 cc., and 3.78 liter bottles. A detergent cream containing 3% of hexachlorophene. U. S. Patent, 2,303,932. U. S. Trademark 408,558. Winthrop-Stearns, Inc., New York.

Mephenesin (See New and Nonofficial Remedies 1951, p. 165).

Powder Mephenesin: Bulk; for manufacturing use. Chemo Puro Mfg. Corporation, Long Island City, N. Y.

Mephobarbital (See New and Nonofficial Remedies 1951, p. 244).

Powder Mephobarbital: Bulk; for manufacturing use only. Chemo Puro Mfg. Corporation, Long Island City, N. Y.

Methionine (See New and Nonofficial Remedies 1951, p. 403).

Powder Methionine: Bulk; for manufacturing use. Chemo Puro Mfg. Corporation, Long Island City, N. Y.

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Meth-Dia-Mer-Sulfonamides (See New and Nonofficial Remedies 1951, p. 103).

Suspension Ray-Tri-Mides: 473 cc. and 3.78 liter bottles. A suspension containing 33 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine in each cubic centimeter. Raymer Pharmacal Company, Philadelphia.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.

RALPH E. DE FOREST, M.D., *Secretary.*

SONOTONE HEARING AID, MODEL 940, ACCEPTED

Manufacturer: Sonotone Corporation, Elmsford, N. Y.

The Sonotone Hearing Aid, Model 940, is an electrical instrument conventional in general design except for its lesser width relative to length and the use of a single wheel-type off-and-gain control at the top center. An unusual feature is the alternative external microphone that can be attached by a separate cord to the main instrument and worn under a costume clip elsewhere on the clothing. The length, including the wheel control at the top, is 105 mm., the width is 37 mm., and the thickness, excluding the clip in front, is 20 mm. The weight without batteries and cord is 96.3 gm. The batteries add 35 gm., and the cord and receiver add 11 gm. A 1.25 volt A-battery and a 15 volt B-battery are required.

Sonotone Hearing Aid, Model 940.

The Council obtained, from an acceptable source, evidence that this device was satisfactory in construction and operation, and that it met the published requirements of the Council for acceptable hearing aids. The Council on Physical Medicine and Rehabilitation voted to include the Sonotone Hearing Aid, Model 940, in its list of accepted devices.

CAMERON CAUTERADIO, MODEL O-25, ACCEPTED

Manufacturer: Cameron Surgical Specialty Company, 666 West Division St., Chicago 10.

The Cameron Cauteradio, Model O-25, is a generator of currents for cutting and coagulating. The currents are tube-generated, and the apparatus is small enough to be carried about and set on a table.

It requires a 50 or 60 cycle alternating current at 110 volts, or can be operated on direct current with a converter. It draws 225 watts of power. Unpacked, it measures 22.5 by 27.5 by 19.4 cm. (9 by 11 by 7¾ in.) and weighs 7.8 kg. (17 lb.). Packed for shipment it measures 29.5 by 34 by 25.3 cm. (11¾ by 13½ by 10 in.) and weighs 9.5 kg. (21 lb.). The foreign shipping weight is 10.5 kg.

Cameron Cauteradio, Model O-25

According to the firm, this device was developed primarily for office procedures. The Council obtained evidence indicating that it was satsifactory for the coagulation and desiccation of small lesions and for cutting in dry or semi-dry fields. The Council on Physical Medicine and Rehabilitation voted to include the Cameron Cauteradio Model O-25, in its list of accepted devices as suitable for office use and minor surgery.

FISCHERQUARTZ LAMP, MODEL 32, ACCEPTED

Manufacturer: R. A. Fischer & Company, 517 Commercial St., Glendale 3, Calif.

The Fischerquartz Lamp, Model 32, is a source of ultraviolet radiation designed for orificial use. The lamp consists essentially of a thin, elongated quartz tube containing a cold mercury arc. The necessary transformer and other electrical apparatus, including the switch, are housed in the handle or grip; to this is attached a cable that can be plugged into any source of 50 or 60-cycle alternating current at 120 volts. The lamp draws 36 watts (0.3 ampere). With the lamp, the manufacturer supplies a quantity of woven rayon tubing to be slipped over the quartz burner when the radiation is to be applied to the interior of a hollow viscus, so as to prevent the radiation from affecting the lining of the orifice or meatus itself.

Fischerquartz Lamp, Model 32

The Council recognizes the limited usefulness of ultraviolet applicators for orificial use and does not believe that orificial application is rational in such conditions as hay fever, ozena, otitis media, and sinus infections. With this understanding, the Council on Physical Medicine and Rehabilitation voted to include the Fischerquartz Lamp, Model 32, in its list of accepted devices.

SILVERTONE HEARING AID, MODEL J-92, ACCEPTED

Manufacturer: Sears, Roebuck and Co., 925 South Homan Ave., Chicago 7.

The Silvertone Hearing Aid, Model J-92, is an electrical instrument conventional in design and construction. Without the clothing clips it measures 86 by 57 by 20 mm. Without batteries, receivers or cord it weighs 80 gm. With batteries, it weighs 128 gm., and with batteries, receiver and cord it weighs 139 gm. It requires a 22½ volt B-battery and a 1½ volt A-battery.

Silvertone Hearing Aid, Model J-92

Evidence from an acceptable source indicated that this device was satisfactory in construction and performance and that it met the published requirements of the Council for the acceptance of hearing aids. The Council on Physical Medicine and Rehabilitation voted to include the Silvertone Hearing Aid, Model J-92, in its list of accepted devices.

ROCHESTER HEARING AID, MODEL R-2, ACCEPTED

Manufacturer: Rochester Acoustical Laboratories, Inc., 117 Fourth St., S. W., Rochester, Minn.

The Rochester Hearing Aid, Model R-2, is an electric instrument, conventional in general design and appearance. Without the clothing clip it measures 63 by 44 by 20 mm. The transmitter unit without batteries weighs 77 gm. With batteries it weighs 103 gm. The receiver and cord weigh 11.5 gm. It differs from Model R-1 in having no tone-control and in being smaller and lighter.

Rochester Hearing Aid, Model R-2

Evidence of satisfactory construction and performance was obtained from sources acceptable to the Council. The Council on Physical Medicine and Rehabilitation voted to include the Rochester Hearing Aid, Model R-2, in its list of accepted devices.

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PHYSICIAN-PATIENT RELATIONSHIP

In the past few years, one of the most important public relations accomplishments of the medical profession has been the establishment of grievance committees. Physicians have come to realize that patients must have an outlet for their just complaints, and that the profession must take the lead in ferreting out doctors who refuse to abide by the Code of Ethics.

Grievance committees have done another thing for the profession. In community after community they have provided a listening post for public relations problems. When complaints over a period of time are tabulated, it is possible to determine trends and to seek ways to prevent recurrence of such grievances. Soon after the committees began functioning, it became apparent that the vast majority of patients' grievances against their doctors stemmed from one thing—misunderstanding. Time and time again patients had gone to a medical society grievance committee complaining of overcharging, only to find that a heart to heart talk with their physician would have settled the matter to their satisfaction. Often the patient complained about the medical care he had received only because he did not understand the services rendered.

It has become obvious that the public relations problem of misunderstanding can be solved only in the doctor's office. Patients must be encouraged to talk over with their doctor any questions they might have regarding his services or his fees.

This encouragement can be given with a simple public relations aid which the American Medical Association is making available as a service to its members. It is an attractive office plaque which reads:

> To All My Patients . . .
>
> I invite you to discuss frankly with me any questions regarding my services or my fees. The best medical service is based on a friendly mutual understanding between doctor and patient.

The new plaque, illustrated and described on advertising page 47, can increase understanding for every practicing physician. Given a prominent place on physicians' desks or waiting room walls, it will show that America's doctors are sincerely interested in providing the best of medical service, the kind of service that comes only from friendly, mutual understanding.

PATERNALISM AND PERSONAL HEALTH

In discussing medical care for the needy, Darley [1] states both that health involves the assumption of individual responsibility and that the upsurge of social consciousness places a premium on human values and resources. The partial anthithesis of these two statements poses a dilemma for medical effectiveness in present day society. Personal independence and social welfare are two basic expectations that democracy encourages. A high premium is placed on the adequacy of the individual, and the need for adequate care for every person is emphasized. However, being cared for and taking care of oneself involve conflicting psychological meanings. How different are the health problems that are involved in accepting care and maintaining independence?

The term paternalism shows this conflict. The physician easily becomes a person toward whom dependency attitudes generated in childhood may be directed. Persons who have attained maturity may lose their feeling of independence because of illness and revert to childlike dependence. In some there may be bitterness and rebellion; in others, a delighted acceptance of another chance at childhood. In either event, if the physician fosters dependency he makes recovery more difficult.

Telling the patient to "buck up" hardly resolves this issue. Such injunctions directly imply that the patient is being a child and are likely to be taken as evidence of rejection and lack of understanding. Every adult has achieved some degree of independence; this should be encouraged, but it must be done adroitly.

Intense craving for dependency is generated in a family where the parents dominate their children's lives or when the children are pampered and every wish granted. Intense hostility toward the parents may occur in such families. The physician is unfortunately easily fitted into this authoritarian parental role. He can accept it, willingly or otherwise, and foster immaturity, or he can deliberately attempt to avoid the bad effects of the patient's childish reactions. Studies related to this issue are suggestive of how dependency may be reduced and responsibility maximized.

A study relevant to health and independent decision was conducted by Bavelas [2] in an industrial setting. Reduction in accident rate was contrasted under two conditions: 1. The workers were brought together and urged to reduce the number of accidents. In this approach no discernible change in accidents occurred. 2. The workers were led by group discussion methods to decide on a particular goal of accident reduction. The goal set by the workers was a much more exacting one than the management expected. In a brief time, the accident rate was reduced to the level that the group had set as its goal. Apparently the crucial difference in this change was that in the first case goals were set by the management and in the second case the goals were set by the individuals. The sense of personal initiative and responsibility made the difference.

1. Darley, W.: Medical Care for the Needy: A Problem for Governmental or Non-Governmental Agencies, GP 2: 77 (Sept.) 1950.
2. Bavelas, cited in Maier, M. R. F.: Psychology in Industry, Cambridge, Mass., Houghton-Mifflin, 1946.

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In a study related to health made by Lewin,[3] it was found that university students and various social level housewives changed readily to a desired pattern of food habits when they were led by group discussion techniques to make decisions in the necessary direction. When control groups were asked to make the desired changes in food habits, relatively little change occurred.

The maintenance of a sense of personal initiative and responsibility seems an important basis for producing effective, healthful living.

A somewhat different aspect of the same problem is illustrated in a study by Roethlisberger and Dickson.[4] Workers selected for an experiment in increasing industrial efficiency were found to experience such a sense of personal satisfaction in having been so chosen that one result was a drastic reduction in the amount of sick time taken by the group. Apparently the enhancement of the sense of personal worth reduced the normal tendencies to illness.

Scientifically, then, we may extend the "self-evident truths" of the Declaration of Independence to include the idea that such rights have emotional and physical health effects. Effective, healthy living is enhanced by independence of decision and action. In direct contrast, paternalistic medical practice (in either "socialized" or private form) contributes to physical and emotional illness. This seems to result whether the basis for "complete medical care" stems from an overdose of social consciousness, as in England, or from autocratic "state consciousness" as in prewar Germany and contemporary Russia.[5]

Ethically, politically, and psychiatrically the cryptic statement made by Darley [1] that "there can be such a thing as too much assistance" seems sound. On the other hand, the personal interdependency which has evolved with personal independence has value for effective living and good health.

Mutual respect and love is as essential an ingredient of health as it is of democratic life. However, the overassumption of responsibility for another person's welfare carries connotations of disrespect and denial of personal worth in the dependent person. When the physician assumes too much responsibility for the welfare of his patient he implies that the patient is unable to make intelligent decisions for himself. The desire to be cared for is a potent aspect of the personality. However, if this "need for nurture" is overgratified it has pathogenic possibilities. Any source of overprotection, be it an overloving mother, a benevolent president, or a Christ-like physician, induces the recipient to give up his initiative, to overvalue or undervalue himself, and to react with hostility toward the source which must inevitably fail in some measure to gratify the intense demands created by the giving.

Too much assistance injures both the giver and the receiver. Medical science throughout its brilliant history has given generously and grown from its gifts. Growth has been most phenomenal in democratic societies in which responsibility for medical welfare has been assumed as much by the patient as by the physician. The patient has not been put in the degrading and injurious position of a parasite. He has been personally responsible for procuring and paying for services needed. The "unremitting patient," whether by choice, charity, or compulsory health insurance, is the patient least likely to achieve remission of symptoms. The notice "please remit" sent by the physician can reasonably be said to convey a therapeutic value and a wish for improvement, for in this connection the sense of personal worth and independence is maintained—a major basis for therapeutic remission in our society.

MASS BLOOD TYPING

Elsewhere in this issue (page 1034) is a summary and analysis of the mass blood-typing program conducted in Jackson, Mich., during the winter of 1950-1951 under the auspices of Michigan Civil Defense authorities. This report by Ahronheim and other summaries of experiments in mass blood grouping are being studied by the Committee on Blood Banks of the American Medical Association. In fact, the program in Michigan was commented on by the Committee on Blood Banks at the Clinical Session in Cleveland last December.[1] The Committee on Blood Banks has stated on several occasions, and its position has been confirmed by the House of Delegates, that mass blood grouping and all other fringe programs that divert public attention from the central problem of procuring blood are not advisable. All the authorities in Washington dealing with blood bank matters in the emergency have expressed agreement with the committee's position. The publication of this article in THE JOURNAL at this time is for the purpose of enabling physicians to keep abreast of developments and should not be interpreted as an indication of American Medical Association support of mass blood typing.

AID FOR VICTIMS OF NAZI EXPERIMENTS

Resolutions passed by the Economic and Social Council of the United Nations relating to the victims of so-called scientific experiments under the Nazi regime paved the way for the consideration of compensation for those unfortunate persons. The World Medical Association has been asked to assist in implementing these resolutions by making known the number and claims of surviving victims and by ascertaining whether they would be willing to have their names and addresses reported to the United Nations provided they were safeguarded from publicity and assured of satisfactory compensation for their disabilities. Dr. Louis H. Bauer, secretary-general of the World Medical Association, has asked that physicians of all member countries report such information to their national medical association for forwarding to the World Medical Association. It is hoped that members of the American Medical Association will cooperate and thus aid in securing redress for victims of concentration camp experiments.

3. Lewin, K.: Forces Behind Food Habits and Methods of Change, Bull. Nat. Res. Counc. **108**: 35, 1943.

4. Roethlisberger, F. J., and Dickson, W. J.: Management and the Worker, Cambridge, Mass., Harvard University Press, 1939.

5. Ebaugh, F. G.: A Psychiatrist Looks at Compulsory Health Insurance, Rocky Mountain M. J. **46**: 364 (May) 1949.

1. J. A. M. A. **144**: 1474 (Dec. 23) 1950. For an earlier comment by the Chairman of the American Medical Association Committee on Blood Banks regarding the program in Jackson County, Michigan, see J. A. M. A. **144**: 781 (Oct. 28) 1950.

ORGANIZATION SECTION

FEDERAL MEDICAL LEGISLATION

The following bills, among others, were introduced during the last few days of the first session of the 82nd Congress.

Emergency Maternity and Infant Care (EMIC)

Senator Lehman of New York introduced S. 2337, the second Senate EMIC bill this Congress. This bill would provide funds to enable the states to make provision for maternity and infant care for wives and infants, and hospital care for dependents, of enlisted members of the armed forces during the present emergency. There would be established a maternity and infant care program for dependents of all enlisted personnel of the armed forces (below the grade of warrant officer) to be administered at the state level. The Children's Bureau would have available such sums as may be necessary to carry out the provisions of the bill and is authorized to assist states that have an acceptable plan. State departments of health would administer the program and would be required to make periodic reports called for by the Administrator of the Federal Security Agency. The cost of the program would be supported equally by the federal government and the state. The creation of a State Advisory Council composed of representatives of medical, nursing, and hospital groups and the public is required. The FSA Administrator would issue regulations after consulting with a committee representing state health authorities. The Administrator would consult also with a 15-member national advisory council representing medical, nursing, and hospital groups and the public. Members of the advisory council would be selected by him.

These provisions of the bill are similar to the program in effect during World War II. However, a second title to the bill seeks to establish a new program—a federal-state program on a fifty-fifty matching financial basis to furnish hospital services to all bed patient dependents of enlisted members of the armed forces regardless of age. A state program is also required to assure the furnishing of hospital services at reasonable costs. The FSA Administrator, before making regulations, would consult with a committee representing state health authorities. The Administrator would have a national advisory council similar to the one proposed by the EMIC program.

The bill contains definitions that apply to both the EMIC and the general hospitalization sections. The term "maternity care" means "such hospital, medical, nursing, and related services in connection with pregnancy and child-birth as may be included in regulations of the Administrator." The term "infant care" means "such hospital, medical, nursing and related services in connection with the care of an infant" (up to five years) as may be included in the regulations of the Administrator. The term "hospital services" means "the following services, drugs, and appliances furnished by a hospital to any individual as a bed patient: bed and board and such nursing services, laboratory services, ambulance service, use of operating room, staff services, and other services, drugs and appliances, as are customarily furnished by such hospital to its bed patients either through its own employees or through persons with whom it has made arrangements for such services, drugs, or appliances; but such term shall not include (1) any medical or surgical care except as is generally furnished by hospitals as an essential part of hospital care, or (2) hospitalization by any hospital which furnishes primarily domiciliary care."

Group Practice and Diagnostic Health Clinics

S. 2247, introduced by Senator Lehman of New York, would amend the Public Health Service Act to authorize grants to the states in extending and improving diagnostic out-patient health services. There would be authorized 25 million dollars for the first year and 50 million annually thereafter, so that the Surgeon General of the Public Health Service could assist, through grants, states, and other political subdivisions of the states, in establishing and maintaining out-patient services in hospitals and health centers for early detection of diseases and referral of persons suffering therewith to medical personnel, hospitals, clinics, and agencies. Financial assistance would also be used in providing treatment, home-care services, and community planning for the ambulatory sick. The bill does not specify that funds provided be used for indigents only. It must be assumed, therefore, that federal funds could partly or wholly support programs for all persons regardless of financial status. An identical bill (S. 4181) was introduced in the 81st Congress and was co-sponsored by Senator Murray.

Senator Lehman of New York also introduced S. 2248, which would authorize loans to assist in the establishment of clinics or medical groups designed to afford improved diagnostic and curative services. This bill would authorize 10 million dollars the first year and 20 million annually for four succeeding years for distribution as loans by the Surgeon General of the Public Health Service to assist in the establishment of clinics and the medical groups furnishing diagnostic or curative services. The Surgeon General would consult with a Federal Hospital Council (purely advisory). Eligible borrowers include (1) a group of physicians, or physicians and dentists, authorized by state law to render medical and dental services; and (2) medical schools, teaching hospitals, and other public or private organizations (this second classification must be nonprofit) that maintain a staff of physicians, engaged in diagnostic services or diagnostic and curative services. Physicians, or physicians and dentists, engaged in group practice, to be eligible for loans must conform to regulations issued by the Surgeon General by having a prescribed balance of specialists and general practitioners and prescribed office facilities, laboratory, nursing staff, and records. They must also render services to all patients referred by welfare agencies and agree to accept payment as specified by regulations. Medical schools, teaching hospitals, and other nonprofit organizations to be eligible must also agree to conform with regulations. Ten-year loans may be used for cost of acquisition, construction, and equipment of new facilities, or the expansion or alteration of existing buildings. Loans may also be used for meeting the cost of maintenance and operation not exceeding three years. The author joined with Senator Murray and introduced a similar bill (S. 4182) in the 81st Congress.

Chronic Diseases

S. 2246, a bill to amend the Public Health Service Act to authorize greater assistance to the states in extending and improving health services for the prevention and reduction of chronic diseases, was introduced by Senator Lehman of New York. This bill is similar to S. 4180 of the 81st Congress, introduced by Senators Lehman and Murray. It would provide 10 million dollars annually to be available for distribution by the Surgeon General of the Public Health Service to states and state subdivisions in establishing and maintaining public health services for the early detection of chronic diseases and for the referral of sufferers of chronic diseases to medical personnel, hospitals, institutions, and agencies. The bill does not specify that funds provided be used for indigents only.

Federal Aid to Nursing Education

Senator Ives of New York joined with seven other Senators and introduced S. 2301, which would amend the Public Health Service Act to provide a program of grants and of scholarships for education in the field of nursing. This bill is identical with H. R. 910 (the Bolton bill) except that a section in this bill provides that nurses accepting federal assistance for education are expected to volunteer their services where most critically needed, and greater emphasis is placed on training of baccalaureate degree nurses.

Investigation of Veterans Administration

Representative Hoffman of Michigan introduced House Resolution 472. This resolution proposes the creation of a special committee of members of the House of Representatives to investigate and evaluate alleged abuses in hospitals and medical and surgical care of veterans, the auditing of accounts rendered for such services, and the construction of the contracts under which such care is rendered, especially in the state of Michigan.

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MEDICAL NEWS

ARIZONA

State Tuberculosis Program.—While tuberculosis claimed the lives of 500 Arizonans last year, the tuberculosis death rate for 1950 fell to a new low of 66.7 per 100,000 population. The rate was 249.8 in 1940, and 421 per 100,000 population in 1930. The state's tuberculosis death rate, however, is still nearly three times higher than the national rate of 22.6 for 1950. According to the state health department, a study revealed that 45% of all persons dying from tuberculosis in Arizona in 1950 contracted the disease while residing within the state. Thirty-four per cent had tuberculosis when they entered the state, and information was incomplete on the length of residence of the rest. Although Arizona Indians comprise about one-tenth of the state's total population, nearly one-fourth of the tuberculosis deaths occur among them. Efforts are being made to reduce the mortality rate. A mobile x-ray unit took over 89,000 chest x-rays in 10 counties in the state during 1950. The state health department has provided a new service, the culturing of sputum specimens for tuberculosis bacilli. A tuberculosis diagnostic clinic has been established at the Phoenix Health Department, and similar facilities at the Maricopa County Clinic have been enlarged. Visible registers have also been set up in Phoenix in Maricopa County. The Tucson-Pima County Health Unit established this type of register in 1949.

CALIFORNIA

New Department Head.—Wendell H. Griffith, Ph.D., professor of biochemistry and nutrition and chairman of the department at the University of Texas Medical Branch, Galveston, has been appointed professor of physiological chemistry and chairman of the department in the new University of California at Los Angeles School of Medicine. Dr. Griffith taught at St. Louis University, where he rose to the rank of full professor; he transferred to the University of Texas in 1948. During World War II as an Army colonel he was in charge of nutrition for all troops in the European theater. He is on the editorial board of the *Journal of Biological Chemistry*.

Personals.—A testimonial dinner was held in San Bernardino recently for Dr. Virgil M. Pinkley, who retired Sept. 1 as superintendent of San Bernardino County Charity Hospital. Dr. Pinkley was appointed to that position in 1933.——A quarter of a century of public health service ended Sept. 1 for Dr. Henry C. Smiley, Redondo Beach, head of the Torrance and Inglewood Health Districts. He was recently honored at a banquet on having reached the retirement age.——Dr. Howard C. Naffziger, professor of neurosurgery emeritus at the University of California School of Medicine, San Francisco, has been made an honorary fellow of the Royal Society of Medicine of England and of the Philippine College of Surgeons.

COLORADO

Conference on Heart Disease.—The Colorado Heart Association, the State Department of Public Health, and the University of Colorado School of Medicine are sponsoring a postgraduate conference on heart disease in Denver Nov. 14-17. The program will open at a dinner meeting Nov. 14 at the Cosmopolitan Hotel. Dr. Paul D. White, Boston, will discuss "Heart Disease Forty Years Ago and Now." The following three days will be devoted to a review of developments in the diagnosis and treatment of disease of the heart and vessels. Other guest lecturers included Dr. Robert P. Glover and Dr. John P. Hubbard, Philadelphia, and Dr. George R. Herrmann, Galveston, Texas. The conference will be attended by physicians and surgeons throughout Colorado and the surrounding Rocky Mountain states.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

FLORIDA

Cancer Seminar in Orlando.—The Southeastern States Cancer Seminar at the San Juan Hotel in Orlando, Nov. 28-30, will be given under direction of the Orange County Medical Society with the cooperation of the Florida State Medical Association and supported by the Florida Division of the American Cancer Society and the state board of health. The faculty are members of the staff of the Francis Delafield Hospital in New York. Papers to be given are as follows:

Milton R. Porter, Current Considerations in Surgery.
Alfred A. Gellhorn, Current Considerations in Chemotherapy.
Vincent P. Collins, Current Considerations in Radiotherapy.

Panel discussions to be given are as follows:

Cancer of the Prostate and the Bladder, Perry B. Hudson, chairman.
Gynecological Cancer, Gray H. Twombly, chairman.
Lymphomas and Blood Dyscrasias, Alfred Gellhorn, chairman.
Cancer of the Breast, Cushman D. Haagensen, chairman.
Cancer of the Head and Neck, Joseph J. McDonald, chairman.
Cancer of the Gastrointestinal Tract, Milton R. Porter, chairman.
Cancer of the Lung, Herbert C. Maier, chairman.

ILLINOIS

Joint Meeting on Narcotics.—A joint meeting of the Illinois Psychiatric Society and the Chicago Medical Society will be held at 8 p. m. Nov. 14 in the John B. Murphy Memorial Auditorium. "Our Narcotic Problem" is the subject of a panel discussion which will be given by authorities in this field.

Chicago

Hospital Alumni Association.—The Mercy Hospital Interne and Resident Alumni Association will meet Nov. 17 in the John B. Murphy Amphitheater at Mercy Hospital-Loyola University Clinics. All doctors are invited to attend the scientific program to be presented during the morning by heads of departments of the Stritch School of Medicine of Loyola University. An informal dinner dance will be held at 6 p. m. at the Blackstone Hotel.

Atomic Scientist Made Assistant Dean.—Dr. George V. LeRoy has been appointed associate dean of the University of Chicago division of biological sciences and associate professor of medicine. Dr. LeRoy was director of the radioisotope unit at the Veterans Administration Hospital at Hines from 1947 to 1951. He was granted leave from Hines to conduct the Eniwetok medical program for the Atomic Energy Commission, and on his return was made consultant to the Los Alamos Scientific Laboratory of the University of California. A lieutenant-colonel in the U. S. Army Medical Corps, he served as chief of the medical service at station hospitals in the Pacific area and with the 12th general hospital at Northwestern University. He has been a consultant in cardiology to the Municipal Social Hygiene Clinic and an associate attending physician on the staff of St. Luke's Hospital.

KENTUCKY

Clock Dedicated to Dr. Abell.—A clock honoring Dr. Irvin Abell, bought from contributions to the school of medicine made in place of flowers sent to his funeral, was dedicated Sept. 13 at the University of Louisville School of Medicine, where he had taught 50 years. Dr. Abell's grandson, Irvin Abell III, unveiled the memorial plaque. The dedicatory address was given by Dr. Oscar O. Miller, university trustee. Dr. Abell's death occurred in August, 1949.

MASSACHUSETTS

Alpha Omega Alpha Lecture.—The first yearly lecture of the Boston University Chapter of Alpha Omega Alpha will be held at 5 p. m. Nov. 21 in Building A of the Boston University School of Medicine Auditorium. Dr. Harry S. N. Greene, professor of pathology, Yale University School of Medicine, New Haven, Conn., will speak on "Significance of the Transplantability of Human Cancer."

MICHIGAN

Chiropractic Not a "School of Medicine."—A Michigan statute relating to the management of public hospitals authorizes the board of hospital trustees to adopt such rules for the governing of the hospital as may be deemed expedient but also provides that no discrimination shall be made against the practitioners of any school of medicine recognized by the laws of Michigan. A rule adopted by the governing board of the Grand View Hospital, Ironwood, provided that only persons licensed to practice medicine and surgery in all its branches should be allowed to practice therein. Contending that he was a practitioner of a "school of medicine," a chiropractor caused the arrest, on criminal complaints, of the hospital trustees on the ground that the rule adopted by the hospital discriminated against him. The trial court, after noting that neither the legislature nor the supreme court of the state had ever defined the term, declined to engage in judicial legislation by defining "school of medicine" as including chiropractic. The hospital rule, therefore, did not violate any legislative act, in the opinion of the trial court, and the criminal complaints against the trustees were dismissed.

MINNESOTA

Symposium on Rheumatic Fever.—This symposium will be presented by the University of Minnesota, Nov. 29-Dec. 1 with the sponsorship and financial support of the Minnesota Heart Association. In addition to members of the faculty of the medical school and the Mayo Foundation, the following will participate by invitation: Drs. T. Duckett Jones, Maclyn McCarty, and George Murphy, all of New York; Dr. Francis F. Schwentker, Baltimore; Dr. Chandler A. Stetsen, Cheyenne, Wyo.; Dr. Charles H. Rammelkamp, Cleveland, and Dr. Lowell A. Rantz, San Francisco. Physicians, teachers, and investigators are invited to attend. There will be no tuition or registration fees.

Minnesota Honors Medical School Alumni.—Medals were presented to 15 distinguished alumni of the University of Minnesota College of Medical Sciences Oct. 8 at a dinner in Coffman Memorial Union in Minneapolis. Dr. George N. Aagaard, director of continuation medical education and dean-elect of Southwestern Medical School, Dallas, Texas, presided. Speakers at the ceremony included Dr. Harold S. Diehl, dean of the medical sciences college, and Dr. Elexious T. Bell, emeritus professor of pathology. The alumni thus honored were Dr. Fred L. Adair, Maitland, Fla.; Dr. Raymond B. Allen, Seattle; Dr. Frank E. Burch, St. Paul; Dr. Earl R. Carlson, New York; Dr. Albert J. Chesley, St. Paul; Dr. Olaf J. Hagen, Moorhead; Dr. Arild E. Hansen, Galveston, Texas; Alma C. Haupt, New York; Dr. Herman E. Hilleboe, Albany, N. Y.; Pearl McIver, Washington, D. C.; Dr. James E. Perkins, New York; Dr. Edith L. Potter, Chicago; Dr. William P. Shepard, San Francisco; Dr. Albert M. Snell, Palo Alto, Calif., and Dr. Edward L. Tuohy, Duluth.

NEW JERSEY

Joint Meeting on Laboratory Techniques.—The New Jersey Society of Clinical Pathologists and the state Society of Medical Technologists are sponsoring a program on Newer Laboratory Techniques, Nov. 18 at Mercer Hospital in Trenton. Ten papers will be given at the morning session. In the afternoon Dr. Sylvan E. Moolten, New Brunswick, will speak on "Viremia in Autoagglutination and Hemolytic Anemia."

Cancer-Public Health Week.—The Middlesex County Medical Society has chosen cancer as the main theme of its annual observance of Public Health Week in the county, Nov. 19-24. At the program in New Brunswick, under the direction of Dr. Charles F. Church, motion pictures on cancer and lectures will be given in the Bayard School Nov. 19. There will be exhibits of various phases of public health. Lectures and exhibits on cancer will be presented at Perth Amboy High School, under the direction of Dr. Edward J. Novak. Arrangements have been made for the performance of tests for the detection of diabetes and tuberculosis. These examinations, as well as the entire program, will be free of charge. Members of the Auxiliary of Middlesex County Medical Society have assisted in arranging the program.

Testimonial to Dr. Hilliard.—Three hundred citizens of Ocean County honored Dr. Joshua Hilliard, Manahawkin, at a gala dinner in August marking his 50th year in the practice of medicine. Dr. Sigurd W. Johnsen, president of the New Jersey Medical Society, headed a panel of distinguished physicians in paying tribute to Dr. Hilliard. A reception was tendered Dr. and Mrs. Hilliard at his ancestral home, built in the bayside community in 1750. The testimonial was suggested by Dr. Blackwell Sawyer of Toms River and arranged by a citizens' committee. Dr. Hilliard has been surgeon for the New Jersey Sons of the Revolution, medical examiner for Stafford Public Schools, and is an honorary life member of the Ocean County Medical Society.

NEW YORK

Medical Librarians Meeting.—The semiannual meeting of the New York Regional Group of the Medical Library Association will be held Nov. 17 from 10 a. m. to 5 p. m. in the Town Hall Club, New York. The New York Group includes New Jersey and Connecticut.

Lectures in Amsterdam.—Two postgraduate lectures have been arranged for the Montgomery County Medical Society on Nov. 13 at the Elks' Club in Amsterdam. At 5 p. m. Dr. J. Scott Butterworth of New York will speak on "Management of Acute Cardiovascular Emergencies." At 8 p. m. Dr. A. Wilbur Duryee, New York, will speak on "Management of Peripheral Vascular Diseases."

Chronic Disease Research Institute.—The University of Buffalo has appointed seven persons in the field of physical medicine and rehabilitation to serve as a complete "team" at the university's new Chronic Disease Research Institute. The group will give primary attention to research and will work on the problems of advancing the handicapped patient "from the bed to a place in industry." This work will be under the direction of Dr. Henry V. Morelewicz, chief of the department of physical medicine and rehabilitation. The appointees are H. Dale Freidman, vocational counselor; George W. Lawn, chief physical therapist; Ian MacLean, assistant physical therapist; Joseph E. Traub, in charge of prosthetics; Miss Elizabeth W. Berry, social worker; Mrs. Clarice F. Schwartz, occupational therapist, and Mrs. Eulalia Weller Fabian, speech therapist. Cooperation of many industries will be needed, and indications are that it will be forthcoming.

New York City

Society News.—At the October meeting of the Brooklyn Dermatological Society the following members were elected to office: Dr. Moses Silverman, president; Dr. Samuel I. Greenberg, vice-president, and Dr. Camillo B. Locasto, secretary-treasurer. The society meets on the third Monday of each month from October to June at the Brooklyn Hospital Dispensary at Ashland Place and Dekalb Avenue.

Harvey Lectures.—Horace W. Magoun, Ph.D., professor of anatomy, University of California, School of Medicine, Los Angeles, will deliver the third Harvey Lecture of the current series at New York Academy of Medicine on Nov. 15. Dr. Magoun will speak on "An Activating System in the Brain Stem." The next two of the lecture series will be given Dec. 20 by Dr. W. Barry Wood Jr., Busch professor of medicine, Washington University School of Medicine, St. Louis, on "Studies on the Cellular Immunology of Acute Bacterial Infections," and on Jan. 17 by Dr. Israel L. Chaikoff, professor of physiology, University of California School of Medicine, Berkeley, on "Metabolic Blocks in Carbohydrate Metabolism in Diabetes."

Treatment of Emotional and Physical Ills.—A demonstration of the benefits of integrating psychiatric treatment with established rehabilitation techniques aimed at retraining the physically disabled will be made at the Institute of Physical Medicine and Rehabilitation, a unit of the New York University-Bellevue Medical Center. Establishment of the program has been made possible by a grant of $73,500 to the University College of Medicine from the Commonwealth Fund. The program will be carried out over a three-year period. The primary aim of the new project will be to provide complete emotional and physical

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care for the disabled. At the same time, methods of using psychiatry and psychosocial techniques in treating the disabled will be included in the training of physicians and other members of the rehabilitation team. A recently concluded three-year institute investigation of the emotional problems of the physically handicapped, also financed by the Commonwealth Fund, had emphasized the need for integrating both emotional and physical problems in attempting to return the physically disabled to normal living. Dr. Morris Grayson, the psychiatrist who directed the initial project, will head the new Psycho-Social Division. In addition to a psychiatrist, the new grant provides for a psychiatric social worker, a psychologist, and two intern psychologists.

OHIO

Dedicate Mont Reid Pavilion.—Dedication of the $1,850,000 Mont Reid Pavilion at the General Hospital in Cincinnati was held Oct. 31. Dr. Reid, a vascular surgeon, was head of the University of Cincinnati department of surgery until his death in 1943. The ceremonies were a part of a three-day program sponsored by the city and the University of Cincinnati. Dr. Frank H. Lahey, Boston, delivered the dedication address. As part of the celebration Sir James Spence, Newcastle-upon-Tyne, England, delivered the B. K. Rachford Lectures. Both speakers received honorary degrees during the program.

Personals.—Dr. Raymond W. Bradshaw has resigned as director of the college health service at Oberlin College and director of Allen Hospital in order to accept the position of director of university health and professor of health education at Southern Illinois University, Carbondale. He had been director of the college hospital at Oberlin for more than 25 years.——A homecoming was given to Dr. Ford C. Ganyard, Wooster, in celebration of 30 years of service to his community. The doctor, who has ushered more than 1,200 babies into the community, was given an engraved gold watch.——Dr. E. Herndon Hudson has resumed his position as director of the Ohio University Health Service after a year's leave of absence with the World Health Organization.——Dr. Robert D. Mercer, formerly assistant professor of pediatrics at Western Reserve University School of Medicine, Cleveland, has been appointed head of the department of pediatrics at the Cleveland Clinic.——Dr. Benjamin Felson has been promoted from associate professor to professor and director in the department of radiology at the University of Cincinnati College of Medicine and director of radiologic service at Cincinnati General Hospital. Dr. Felson has been at the University of Cincinnati since 1946.

PENNSYLVANIA

Hospital News.—Cornerstone ceremonies were held recently for the new million-dollar Warren General Hospital in Warren. There will be no interruption of present hospital services. When the new building is completed, the present hospital will be entirely remodeled.

Cancer Symposium.—This symposium will be held at Sacred Heart Hospital in Allentown, Dec. 13, sponsored by the cancer clinic there. Cancers of the thyroid, colon, pelvic organs, and the lung will be discussed by physicians from the University of Pennsylvania, Philadelphia.

Honor Retiring Surgeon.—More than 500 persons gathered at a dinner in Pottsville Sept. 12 to honor Dr. Guy A. Robinhold, retiring chief surgeon of the Ashland State Hospital. He was presented bonds amounting to $3,000 as a token of esteem. Dr. Robinhold retired Aug. 31 after 32 years as intern, surgeon, and chief surgeon at the hospital. Dr. W. Emory Burnett, professor and head of the department of surgery at Temple University School of Medicine, Philadelphia, was among the speakers.

Philadelphia

New Cerebral Palsy Center.—A center for the treatment of cerebral palsy has been established in the Chestnut Hill section. The United Cerebral Palsy Association and the Pennsylvania Chapter are backing the center. Its main building will be a converted three-story, 22-room mansion; another building on the property will be made into a school. The center will bring together a team of physicians, therapists, and specialists. Charlotte E. Grave, Ph.D., former director of the Child Research Clinic at Woods School, Langhorne, is executive director of the center. Dr. Albert A. Martucci, chief of service of the physical medicine department at Philadelphia General Hospital, is chairman of the center's medical and professional board.

Appointments and Grants to Hahnemann.—The following new appointments have been made to the full-time faculty of Hahnemann Medical College and Hospital of Philadelphia: John W. Van Dyke, Ph.D., professor of anatomy beginning Sept. 1, formerly associate professor of anatomy, University of Indiana School of Medicine, Indianapolis; Dr. Russell W. Weller, assistant professor of pathology beginning June 1, formerly instructor in pathology, Jefferson Medical College of Philadelphia; Peter Oesper, Ph.D., assistant professor of biochemistry beginning Sept. 1, formerly research associate in the department of biochemistry at the University of Pennsylvania Medical School; and Dr. Harry Goldberg, assistant professor of physiology and clinical physiologist to the hospital, formerly fellow of cardiovascular research at Michael Reese Hospital, Chicago.

Among the recent grants received by the college are the following: $1,800 from the National Council of Brith Sholem Women for the establishment of a clinical laboratory for cardiovascular and pulmonary research under the supervision of Dr. Charles P. Bailey and Dr. Harry Goldberg; $25,000 from the U. S. Public Health Service to the department of thoracic surgery under the supervision of Dr. Bailey for the development of a heart-lung apparatus and the surgical collection of cases of inflammatory valvular disease and congenital defects; $10,000, an anonymous gift, for the purpose of clinical study of bone metabolism in health and disease under the supervision of Dr. Harry E. Banghart.

Pittsburgh

Industrial Medical Director.—Dr. D. John Lauer, former assistant professor of industrial medicine at the University of Cincinnati, has been appointed medical director of the Jones and Laughlin Steel Corporation. He will direct and supervise the employee health program of the corporation and its medical facilities in plants and factories throughout the United States. Dr. Lauer was associated with the Kettering Laboratory at the University of Cincinnati and was also active in organizing in-plant health programs in the smaller industries. He holds one of the nation's first doctorate degrees in industrial medicine from the University of Pittsburgh.

TEXAS

Pediatrics Refresher Course.—This course will be offered at the University of Texas Medical Branch, Galveston, Nov. 26-30, under the direction of Dr. Arild Hansen, professor of pediatrics, and his associates in the department of pediatrics. Guest speakers include Dr. Charles C. Chapple of the University of Pennsylvania, Philadelphia; Dr. Russell J. Blattner, Baylor Medical College, Houston; Dr. Gilbert B. Forbes of Southwestern Medical College, Dallas, and Dr. F. Howell Wright, University of Chicago.

Muscular Dystrophy Research.—The Muscular Dystrophy Research Foundation, Inc., Liberty, has arranged through the auspices of the Texas Medical Center for the establishment of a research program in muscular dystrophy at Baylor University College of Medicine, part of the Medical Center in Houston. A grant has been made to Baylor sufficient to initiate the program and operate it for about one year. Baylor University College of Medicine will organize a program for investigation of neuromuscular disorders to which muscular dystrophy is related, under the supervision of Dr. William S. Fields, professor of neurology, and Dr. Hebbel E. Hoff, professor of physiology. Research will be correlated with projects in the medical school and with other institutions and laboratories making up the Texas Medical Center.

VIRGINIA

State Medical Election.—The Medical Society of Virginia at its annual meeting in Virginia Beach, Oct. 7-10, installed Dr. John T. Hundley, Lynchburg, as president. Other officers for the coming year include Dr. James L. Hamner, Mannboro, president-elect, and Robert I. Howard, Richmond, executive secretary-treasurer.

University Promotions.—Dr. Walter O. Klingman has been promoted from associate professor to professor of neurology and psychiatry at the University of Virginia Department of Medicine, Charlottesville. Other promotions recently announced are those of Dr. Kenneth R. Crispell to assistant professor of internal medicine; Hans Hoch, Ph.D., to assistant professor of biochemistry; Dr. Preston B. Lowrance to assistant professor of internal medicine; Dr. Robert A. Kelley to assistant professor of urology; Dr. Clifford G. Gaddy to instructor in internal medicine, and Dr. Donald H. Ferguson to instructor in internal medicine.

WISCONSIN

Meeting of Trudeau Society.—The Wisconsin Trudeau Society will meet at the new Veterans Administration Hospital in Madison, Nov. 16-17. Speakers include Dr. William B. Tucker, chief, tuberculosis service, Veterans Administration Hospital in Minneapolis, who will speak on "Chemotherapy in Tuberculosis." Members of the faculty of the University of Wisconsin Medical School will present "Lung Cuttings," and Dr. Joseph W. Gale of the university will speak on the results from pulmonary resection in tuberculosis. The final session will be a demonstration of physical medicine for pulmonary exercises by Dr. Harry D. Bouman of the university.

Texas Club Visits Medical School.—The department of medicine of the University of Wisconsin Medical School in Madison was host to the Texas Club of Internists, a travel club of specialists in internal medicine from all parts of Texas, Oct. 8-12. This group makes a similar visit to a medical center each year; this was their first trip to Wisconsin. The medical department under the directorship of Dr. Ovid O. Meyer, departmental chairman, presented a scientific program for the group. Thirty-six internists, many of them teachers in the three medical schools in Texas, attended. To show its appreciation the club presented to the department of medicine a substantial sum of money, which was promptly turned over to the Medical School Library Building Fund.

Report of State Medical Meeting.—At the recent annual meeting in Milwaukee the State Medical Society of Wisconsin installed Dr. Albion H. Heidner, West Bend, as president. Other officers for the year include Dr. Joseph C. Griffith, Milwaukee, president-elect, and Dr. William D. Stovall, Madison, delegate to the American Medical Association, with Dr. David J. Twohig, Fond du Lac, as alternate. The Council Award of the society was bestowed on Dr. Frederick A. Stratton, professor emeritus of clinical surgery at Marquette University Medical School, Milwaukee. It is granted only to physicians who have "served the science of medicine, their fellow physicians and the public with outstanding distinction." The award cited his long association with Marquette University Medical School, where he has been since 1934 director of its department of surgery.

GENERAL

Mississippi Valley Award.—Dr. Grayson L. Carroll, associate professor of urology at St. Louis University School of Medicine, received the 1951 Distinguished Service Award of the Mississippi Valley Medical Society. The gold medal and a certificate were presented to Dr. Carroll at the annual meeting banquet in Peoria, Ill., in September. Dr. Carroll is also head of the department of urology at St. Louis City Hospital and was president of the Mississippi Valley Medical Society in 1946.

Award for Research in Infertility.—The American Society for the Study of Sterility announces the opening of the 1952 contest for the most outstanding contribution to the subject of infertility and sterility. The winner will receive a cash award of $1,000, and the essay will appear on the program of the 1952 meeting of the society. Essays submitted must be received not later than March 1, 1952. For details address the American Society for the Study of Sterility, 20 Magnolia Terrace, Springfield, Mass.

Cerebral Palsy Meeting.—The annual convention of United Cerebral Palsy was held Nov. 1-4 in Philadelphia. Speakers included Dr. Pearce Bailey, director of the newly established National Institute of Neurological Diseases and Blindness, U. S. Public Health Service, Bethesda, Md.; Gov. John S. Fine of Pennsylvania; Dr. Winthrop M. Phelps, Baltimore, director, Children's Rehabilitation Institute; Dr. Sidney Farber of Children's Medical Center, Boston; Earl J. Hudson, Detroit, national campaign chairman for 1951, and Dr. Charles F. McKhann, Cleveland, acting medical director. The Chestnut Hill Project, the first pilot center established by United Cerebral Palsy in the United States for the research, diagnosis, and treatment of those with cerbral palsy, was dedicated.

Council of New England Societies.—The Council of New England State Medical Societies will meet at the Copley-Plaza Hotel in Boston Nov. 18. The afternoon will be devoted to a symposium on Professional Relations in Medical Care Insurance. The visiting speaker will be Frank E. Smith, Ph.D., director of the National Association of Blue Shield Plans, Chicago, who will speak on "National Efforts to Achieve Physician Cooperation with Blue Shield." The after dinner speaker will be Dr. Louis H. Bauer, Long Island, N. Y., President-elect of the American Medical Association.

Meeting of Association of Medical Clinics.—The annual session of the American Association of Medical Clinics will be held at the Mayfair Hotel, Los Angeles, Dec. 3, under the presidency of Dr. Wallace M. Yater, Washington, D. C. Dr. John W. Cline, San Francisco, President of the American Medical Association, will give the luncheon address. Dr. Jean S. Felton, medical director, Oak Ridge National Laboratory, Oak Ridge, Tenn., will speak on "Industrial Medicine and the Group Clinic—A Mutually Advantageous Relationship," and Dr. Russel V. Lee of Palo Alto, Calif., on "Research in Clinics by Outside Physicians." The session will close with a panel discussion on "Relations of Clinics to the Medical Profession and the Public," which will be moderated by Dr. Bernard A. Watson, Clifton Springs, N. Y.

Conference of Industrial Foundation.—The theme of the 16th annual Conference of the Industrial Hygiene Foundation, at Mellon Institute, Pittsburgh, Nov. 14-15, will be "The Executive and Health." The foundation is a nonprofit research association of leading industries for advancing health, improving working conditions, and bettering human relations. Organized in 1935 at Mellon Institute, it now consists of 350 member companies besides special subscribers interested in the "human side of business." The foundation staff includes physicians, chemists, engineers, biochemists, and medical technicians, all specialists in the health problems arising in industries. Through affiliation with the Industrial Hygiene Foundation, companies are entitled to the services of these specialists plus the technical facilities of Mellon Institute.

Life Insurance Medical Research Fund Fellowships.—The Life Insurance Medical Research Fund invites faculty members to nominate candidates for 1952-53 predoctoral fellowships for research in the medical sciences. These fellowships are open to those who will have completed one year or more of work in a medical or graduate school and are in a position to devote at least three-quarters of their time to research. Preference is given to those who wish to work on fundamental problems in cardiovascular function. The usual stipend is at the rate of $1,800 to $2,200 per annum. Candidates themselves should not apply but rather should be nominated by investigators who are willing to sponsor them on the basis of personal knowledge. The closing date for nominations is Dec. 31. Information may be obtained from the scientific director of the fund at 2 East 103d St., New York 29.

Miners Aid in Providing Hospitals.—The UMWA Welfare and Retirement Fund has approved loans to three nonprofit charitable corporations in Kentucky, West Virginia, and Virginia for the construction of hospitals over a three-year period in 10 coal mining communities in these states. The loans are being made to memorial hospital associations of Kentucky, West Virginia, and Virginia. The fund is concerned with the quality of care provided its beneficiaries as well as with its cost. Spokesmen for the fund report that the continuing inadequacy of hospital facilities in certain coal mining areas of the three states compel the fund, in order to discharge its obligations to beneficiaries in these areas, to arrange for the construction of new hospitals and hospital facilities. The hospitals will be built in the general areas of

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Harlan, Cumberland, Hazard, Pikeville, Jenkins, and Wheelwright, Ky.; in Beckley, Logan and Williamson, W. Va., and Coeburn, Va. The three memorial hospital associations will determine which hospital will be constructed first. Their business offices are located on the sixth floor, 1427 I St., N. W., Washington, D. C. Directors of each of the associations are Dr. John T. Morrison, Charleston, W. Va., Dr. Dean A. Clark, New York, Mr. Edward L. Carey, Mr. Henry C. Daniels, and Mr. Henry Combs.

Academy Awards First Grulee Medal.—Dr. Edgar E. Martmer, Grosse Point, Mich., was awarded the first Clifford G. Grulee Gold Medal for outstanding service in behalf of the American Academy of Pediatrics meeting in Toronto, Canada, Oct. 24. Previous to his appointment as treasurer in 1950, Dr. Martmer was assistant secretary for 11 years. The executive secretary and founder of the American Academy of Pediatrics was Dr. Clifford G. Grulee, now honorary president, in whose honor the gold medal was instituted. From 1927 to 1948 Dr. Martmer was associate professor of pediatrics and since 1948 has been associate professor of clinical pediatrics at Wayne University College of Medicine, Detroit. He also was an associate epidemiologist of the Detroit Department of Health from 1927 to 1932. Dr. Martmer is chief of the pediatric division of Harper Hospital, Detroit; pediatrics consultant, City of Detroit Receiving Hospital, Woman's Hospital and Florence Crittenton Hospital, and physician, Children's Hospital. A past president of the Detroit Pediatric Society, he also was chairman of the Pediatric Section, Michigan State Medical Society.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States in the weeks ended as indicated:

Area	Oct. 27, 1951	Oct. 20, 1951	Oct. 28, 1950
New England States			
Maine	..	..	3
New Hampshire	..	1	2
Vermont	..	..	1
Massachusetts	3	3	23
Rhode Island	..	1	..
Connecticut	9	11	16
Middle Atlantic States			
New York	47	82	180
New Jersey	11	14	47
Pennsylvania	29	31	51
East North Central States			
Ohio	41	48	101
Indiana	17	14	27
Illinois	67	54	110
Michigan	39	64	126
Wisconsin	57	51	67
West North Central States			
Minnesota	25	27	23
Iowa	8	10	56
Missouri	18	40	16
North Dakota	1	2	..
South Dakota	1	4	3
Nebraska	9	19	12
Kansas	34	50	23
South Atlantic States			
Delaware	..	..	1
Maryland	15	7	31
District of Columbia	1	3	6
Virginia	8	9	30
West Virginia	22	11	7
North Carolina	6	17	28
South Carolina	2	6	11
Georgia	10	18	14
Florida	7	5	10
East South Central States			
Kentucky	10	28	14
Tennessee	16	36	12
Alabama	19	8	3
Mississippi	26	25	18
West South Central States			
Arkansas	14	10	7
Louisiana	20	23	18
Oklahoma	17	13	8
Texas	56	51	55
Mountain States			
Montana	5	1	3
Idaho	4	8	4
Wyoming	9	4	..
Colorado	8	17	9
New Mexico	3	8	1
Arizona	5	6	4
Utah	31	23	3
Nevada	2	2	..
Pacific States			
Washington	16	20	21
Oregon	15	22	26
California	140	155	77
Territories and Possessions			
Alaska	..	..	4
Hawaii	1	1	1
United States	904	1,063	1,319

FOREIGN

Spanish Congress on Digestive Pathology and Nutrition.—The sixth Spanish Congress on Digestive Pathology and Nutrition took place at Santander on Sept. 5-8 with Dr. Abilio G. Baron presiding. During the sessions papers were presented on "Postgastrectomy Syndromes" and "Cancer of the Colon." Communications on 43 other subjects were studied, and color films illustrating surgical techniques were shown. Dr. Hillemand, president of the French National Society of Gastroenterology, and Dr. MacNee, president of the English Society of Gastroenterology, spoke on "Polyposis of the Colon and Its Cancerous Degeneration" and "Epidemic Infectious Hepatitis," respectively. At the close of the congress, the general meeting of the Spanish society took place, Dr. H. G. Mogena presiding, and resolutions were adopted relating to forthcoming scientific sessions.

Philippine Drive Against Tuberculosis.—A campaign against tuberculosis will be launched this year in the Philippines with $350,000 which the Economic Cooperation Association will allocate each year for five years, Dr. Sixto Francisco, chief of the tuberculosis control division of the department of health, has announced. The aid will come in the form of equipment, supplies, and materials to be added for use in existing chest clinics, mobile x-ray units, and technicians to launch 10 antituberculosis units. Organization of 10 such units each year will mean servicing 10 provinces until a total of 50 units and 50 provinces are being served. Provinces with the highest incidence and the highest tuberculosis mortality rates will be given priorities in the current campaign. At present there are seven chest clinics operating plus three mobile x-ray units. Teams in the field have already laid the groundwork for the initial moves in the campaign.

LATIN AMERICA

Congress of Physical Medicine.—The fourth convention of the Latin-American Congress of Physical Medicine will meet in Panama City, R. P., Feb. 24-29. Interested persons may communicate directly with the executive director of the congress, Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, prior to Dec. 25. Applications will be considered in the order they are received.

Dr. Jolliffe in Brazil.—Invited by Brazilian Public Health authorities, Dr. Norman Jolliffe, associate professor of nutrition, School of Public Health, Columbia University, was in that country from Aug. 19 to Sept. 8. In Sao Paulo Dr. Jolliffe collaborated in the flour enrichment program that professor Francisco A. Cardoso (secretary, Public Health Department, Sao Paulo State) hopes to experiment with in the near future. In Rio de Janeiro, under the auspices of the Institute of Nutrition, University of Brazil, Dr. Jolliffe gave a lecture, "Surveys in Newfoundland," to medical postgraduates in nutrition. He lectured also on "Results of Enrichment Program in Several Countries" at the Brazilian Academy of Medicine; "Role and Functions of Nutritionists and Dietetians" at the Brazilian Dietetic Association; and "Nutritional Surveys—Their Techniques" at the Brazilian Academy of Military Medicine. Professor Rubens de Siqueira, director of courses in the Institute of Nutrition, University of Brazil, who worked with Dr. Jolliffe (1942-1943) accompanied him and his wife to the medical centers.

DEATHS IN OTHER COUNTRIES

John B. Hunter, C. B. E., F. R. C. S., surgeon of the Kings College Hospital and the Royal Chest Hospital, London, England, died at his home in Epsom, Sept. 16 following a long illness. He was appointed to the staff of the Kings College Hospital in 1928, 10 years later became dean of the medical school, and served as a representative of the Faculty of Medicine on the Senate of London University, where he was at one time a deputy vice-chancellor. He was joint editor with Sir Cecil Wakeley of Rose and Carless' *Manual of Surgery* and was the author of many articles in surgical journals.

CORRECTION

Reactions to Intrathecal Streptomycin.—In THE JOURNAL, Oct. 27, 1951, page 819, the words "by intravenous route" immediately under the table and preceded by an asterisk should have been "by intraventricular route."

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 24-26, 1952. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

COLORADO:* *Examination.* Denver, Jan. 9-11. Final date for filing application is Dec. 10. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver 2.

CONNECTICUT:* *Regular.* Hartford, Nov. 13-14. Sec. to Bd., Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, Nov. 6-17. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: *Examination.* Dover, Jan. 8-10. *Endorsement.* Dover, Jan. 17. Sec., Dr. J. S. McDaniel, 229 South State St., Dover.

DISTRICT OF COLUMBIA:* *Examination.* Washington, Nov. 13-14. Sec., Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

FLORIDA:* *Examination.* Jacksonville, Nov. 25-27. Sec., Dr. Homer L. Pearson, 701 DuPont Bldg., Miami.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. John K. Battenfield, Agana.

HAWAII: *Examination.* Honolulu, Jan. 14-17. Final date for filing application is Dec. 14. Sec., I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, Jan. 7-9. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

INDIANA: Indianapolis, June 1952. Sec., Dr. Paul R. Tindall, 1138 K of P Bldg., Indianapolis 4.

IOWA:* *Examination.* Des Moines, Dec. 3-5. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: Topeka, Dec. 12-13. Sec., Dr. O. W. Davidson, 772 New Brotherhood Bldg., Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 11-13. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville

MAINE: Portland, Nov. 13-14. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Examination.* Baltimore, Dec. 11-14. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Jan. 15-18. Sec., Dr. Robert C. Cochrane, Room 37 State House, Boston.

MISSISSIPPI: *Reciprocity.* Jackson, December. *Examination.* Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Old Capitol Bldg., Jackson.

MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEVADA: Carson City, Nov. 12. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

NORTH CAROLINA: *Endorsement.* Raleigh, Jan. 21. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 2-5. Sec., Dr. C. J. Glaspel, Grafton.

OKLAHOMA:* *Examination.* Oklahoma City, June 4-5. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

PENNSYLVANIA: Philadelphia, January. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: *Examination.* San Juan, March 4. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

SOUTH CAROLINA: *Examination.* Columbia, Nov. 12-14. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA:* *Examination.* Sioux Falls, Jan. 15-16. Ex. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TEXAS:* *Examination.* Houston, Dec. 3-5. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

VIRGINIA: *Examination.* Richmond, Dec. 6-8. Final date for filing application is Nov. 24. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

WISCONSIN:* Madison, Jan. 8-10. Sec., Dr. A. C. Koehler, River Falls.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: *Examination.* On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

COLORADO: *Examination.* Denver, Dec. 5-6. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

MINNESOTA: *Examination.* Minneapolis, Jan. 8-9. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

NEW MEXICO: *Examination.* Santa Fe, Dec. 16. Sec., Mrs. Marguerite Cantrell, Box 1592, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma, April 14. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Dec. 1. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Nov. 14. Sec., Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: *Examination.* Vermillion, Dec. 7-8. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TENNESSEE: *Examination.* Memphis, Dec. 27-28. Sec., Dr. O. W. Hyman, 864 Union Ave., Memphis.

WISCONSIN: *Examination.* Milwaukee, Dec. 1. Madison, April 5. Sec., Mr. W. H. Barber, Ripon College, Ripon.

* Basic Science Certificate required.

MEETINGS

AMERICAN MEDICAL ASSOCIATION CLINICAL SESSION, Los Angeles, Dec. 4-7. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

AMERICAN ACADEMY FOR CEREBRAL PALSY, Copley Plaza, Boston, Nov. 16-17. Dr. Meyer A. Perlstein, 4743 N. Drake Ave., Chicago 35, Secretary.

AMERICAN ACADEMY OF TROPICAL MEDICINE, Congress Hotel, Chicago, Nov. 14-17. Dr. Clay G. Huff, Navy Medical Research Institute, Bethesda 14, Md., Secretary.

AMERICAN ASSOCIATION OF MEDICAL CLINICS, Mayfair Hotel, Los Angeles, Dec. 3-4. Dr. Edwin P. Jordan, Box 114, Charlottesville, Va., Executive Director.

AMERICAN SOCIETY OF TROPICAL MEDICINE, Congress Hotel, Chicago, Nov. 15-17. Dr. Quentin M. Geiman, 25 Shattuck St., Boston 15, Secretary.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASES, Hotel Roosevelt, New York, Dec. 14-15. Dr. Clarence C. Hare, 170 Maple Ave., White Plains, N. Y., Secretary.

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS, Washington, D. C., Nov. 26-30. Dr. John D. Porterfield, 306 Ohio Depts. Bldg., Columbus 15, Ohio, Secretary.

NORTH PACIFIC SURGICAL ASSOCIATION, Vancouver, B. C., Canada, Nov. 16-17. Dr. J. A. Duncan, 509 Olive Way, Seattle, Wash., Secretary.

PUERTO RICO MEDICAL ASSOCIATION, Santurce, Dec. 12-16. Dr. Victor J. Montilla, P. O. Box 3866, Santurce, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Chicago, Dec. 3-7. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

STATE MEDICAL JOURNAL CONFERENCE, Chicago, Nov. 12-13. Mr. A. J. Jackson, 535 North Dearborn St., Chicago 10, Secretary.

SOUTHERN SURGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Dec. 4-6. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn. Secretary.

WESTERN SURGICAL ASSOCIATION, Broadmoor Hotel, Colorado Springs, Colo., Nov. 29-Dec. 1. Dr. Michael L. Mason, 154 E. Erie St., Chicago 11, Secretary.

INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, Hon. General Secretary.

COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

INTERNATIONAL COLLEGE OF SURGEONS, Madrid, Spain, May 20-24. Dr. Max Thorek, 850 West Irving Park Road, Chicago, Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, Mexico City, Mexico, Dec. 11-19. Mrs. Gracie E. O'Neill, Division of World Affairs, National Association on Mental Health, 1790 Broadway, New York 19, N. Y.

INTERNATIONAL CONGRESS ON NEUROPATHOLOGY, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Mexico City, Mexico, Jan. 6-12. Dr. Luis Sanchez Bulnes, Gomez Farias 19, Mexico 4, D.F., Secretary-General.

PAN AMERICAN CONGRESS OF PEDIATRICS, Montevideo, Uruguay, Dec 5-8. Dr. Maria Luisa Saldien de Rodriguez, Avenida 18 de Julio, 1246, Montevideo, Uruguay, General Secretary.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, Montevideo, Uruguay, Dec. 2-8. Dr. Elizabeth Mason Hohl, 1234 North Vermont Ave., Los Angeles 27, President.

PAN PACIFIC SURGICAL ASSOCIATION CONGRESS, Honolulu, Hawaii, Nov. 7-19. Dr. Forrest J. Pinkerton, Suite 7, Young Bldg., Honolulu, Hawaii, President

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DEATHS

Davis, Benjamin Franklin ✠ San Marino, Calif.; born in Chicago Oct. 13, 1884; Rush Medical College, Chicago, 1912; received a Ph.D. in pathology and physiology at the University of Chicago in 1910; formerly a fellow in surgery at his alma mater and the Presbyterian Hospital in Chicago, serving as assistant attending surgeon and assistant in surgery at these institutions; during 1920 was associate attending surgeon at the Children's Memorial Hospital in Chicago; practiced in Duluth, Minn., from 1920 to 1940 and was a member of the staff of St. Luke's Hospital, St. Mary's Hospital, and Miller Memorial Hospital, where he was chief of staff; on the staffs of Huntington Memorial Hospital, St. Luke Hospital, and Alta Vista Hospital in Pasadena, and the Alhambra (Calif.) Hospital; past president of the Duluth Surgical Society; member of the Western Surgical Association and the Institute of Medicine of Chicago; fellow of the American College of Surgeons; member of the founders group of American Board of Surgery; served during World War I; chairman of the health committee of the Alhambra Chamber of Commerce; died Aug. 26, aged 66, of acute coronary occlusion.

Booth, Arthur Woodward ✠ Elmira, N. Y.; born in Elmira, N. Y., Jan. 17, 1871; University of Pennsylvania Department of Medicine, Philadelphia, 1894; a member of the House of Delegates of the American Medical Association from 1923 to 1932 and member of the Board of Trustees from 1932 to 1942, serving as chairman from 1937 to 1942; member of the founders group of the American Board of Surgery; past president of the Medical Society of the State of New York; fellow of the American College of Surgeons; affiliated with Moses Ludington Hospital in Ticonderoga, Tioga County General Hospital in Waverly, Cornell University Infirmary, Ithaca, Arnot-Ogden Memorial and St. Joseph's hospitals; director and vice-chairman of the Merchant's National Bank and the Elmira Bank and Trust Company for over 40 years; commissioner on the Finger Lakes state park commission for over 20 years and chairman since 1948; member of the New York State Council of Parks since 1948; chairman of the board of trustees of the Chemung County Historical Society; died Oct. 22, aged 80, of carcinoma of the rectum.

Moorhead, Louis David ✠ Chicago; born in Chicago Nov. 22, 1892; Rush Medical College, Chicago, 1917; in 1919 joined the faculty of Loyola University School of Medicine as dean, served as professor and head of the department of surgery from 1929 to 1940, when he resigned, returning as professor of surgery in April 1950; member of the founders group of the American Board of Surgery; fellow of the International College of Surgeons and the American College of Surgeons; served as chief of the medical board of the Archdiocese of Chicago; associated with the Chicago Board of Health and the City Fire Department; chairman of the board of trustees of the Lewis Memorial Maternity Hospital and senior attending surgeon at Mercy Hospital; among his Papal honors was the Knight of St. Gregory conferred in 1931 and the Order of Knight with grand star and cross in 1950; in 1932 awarded the Cross of the Chevalier of the Order of the Crown of Italy by the Italian King and in 1946 was made a knight commander of that order; died Sept. 14, aged 58, of heart disease.

Linde, Joseph Irving ✠ New Haven, Conn.; born in New Haven, Conn., April 1, 1886; Yale University School of Medicine, New Haven, 1908; for many years clinical professor of pediatrics and public health at his alma mater; specialist certified by the American Board of Pediatrics; member of the American Public Health Association, American Academy of Pediatrics, of which he had been chairman for Connecticut, and the American Trudeau Society; fellow of the American College of Physicians; past president of the Connecticut Tuberculosis Association, the New Haven County Medical Association, and the Connecticut State Medical Society and former chairman of its committee on public health; member and at one time chairman of the Connecticut State Tuberculosis Commission; a director of the National Tuberculosis Association; since 1935 city health officer; medical director of the Child Welfare Conferences of the Visiting Nurse Association from 1915 to 1932; consulting pediatrician at Grace-New Haven Community and St. Raphael's hospitals; died Sept. 15, aged 65.

Ladin, Louis Julius, New York; born Oct. 15, 1862 in Kovna, Lithuania; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; member of the American Medical Association; fellow of the American College of Surgeons; professor emeritus of gynecology at the New York Polyclinic Medical School and Hospital, which he had joined in 1889 as an assistant in gynecology, later became professor of gynecology, served as president of the faculty, and was also on the board of directors; member of the State Board of Regents for Nurses; during World War I served in the medical corps of the U. S. Army at Camp Merritt, N. J., where he was chief of the surgical division and later was in command of a reserve evacuation hospital; consulting surgeon, Gouverneur Hospital; consulting gynecologist, Beth Israel Hospital, Hospital for Joint Diseases, Jewish Memorial Hospital, and the New York Polyclinic Medical School and Hospital, where he died Sept. 15, aged 89.

Moore, Oren, Charlotte, N. C.; born in Pineville, N. C., in 1886; North Carolina Medical College, Charlotte, 1911; member of the American Medical Association, American Association of Obstetricians, Gynecologists and Abdominal Surgeons, and the South Atlantic Association of Obstetricians and Gynecologists, of which he had been president; fellow of the American College of Surgeons; past president of the Medical Society of North Carolina and the Mecklenburg County Medical Society; specialist certified by the American Board of Obstetrics and Gynecology; affiliated with Camden (S. C.) Hospital, Conway (S. C.) General Hospital, Charlotte Memorial Hospital, and Presbyterian Hospital; on the advisory staff of Good Samaritan Hospital; a trustee of the Davidson (N. C.) College; died Aug. 29, aged 64, of bronchogenic carcinoma.

Meredith, Florence Lyndon ✠ Watertown, Mass.; born in Boston in 1888; Tufts College Medical School, Boston, 1916; professor of hygiene and public health, emeritus, at her alma mater; professor of hygiene and preventive medicine and physician to students, Woman's Medical College of Pennsylvania from 1920 to 1923; college physician, professor of hygiene and chairman of the department of hygiene, Smith College, Northampton, Mass., from 1923 to 1927; lectured at Simmons College in Boston; member of the American Association for the Advancement of Science, American Psychiatric Association, and the American Public Health Association; past president of the Association of Women in Public Health; author of "Hygiene," "Health and Fitness," and "The Science of Health"; died Aug. 16, aged 67, of carcinoma of the stomach.

Kyle, Joseph Allen ✠ Houston, Texas; born in Fincastle, Va., Feb. 25, 1871; College of Physicians and Surgeons, medical department of Columbia College, New York, 1894; fellow of the American College of Surgeons; professor of clinical surgery at Baylor University College of Medicine; past president of the state board of medical examiners and of the Harris County Medical Society; emeritus consultant, Hermann and Jefferson Davis hospitals; vice-president and member of the board of directors of the Houston National Bank; chairman of the board of directors of the Houston First Federal Savings and Loan Association; died in St. Joseph's Infirmary Sept. 1, aged 80, of cerebral anoxemia and benign prostatic hypertrophy.

Andersen, Glenn Cook ✠ Phoenix, Ariz.; University of Illinois College of Medicine, Chicago, 1935; member of the Michigan State Medical Society and the American Psychiatric Association; served during World War II; clinical director, Arizona State Hospital; formerly on the staff of the Kalamazoo State Hospital in Kalamazoo, Mich.; served on the staffs of various Veterans Administration hospitals; died Aug. 25, aged 44, of injuries received in an automobile accident.

✠ Indicates Fellow of the American Medical Association.

Anderton, Thomas B., Winchester, Tenn.; Vanderbilt University School of Medicine, Nashville, 1893; for many years county health officer; died July 5, aged 84.

Atonna, Carmelo ✠ New York; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1894; an Associate Fellow of the American Medical Association; served on the staffs of Columbus and Parkway hospitals; died in Misericordia Hospital Aug. 29, aged 83, of adenocarcinoma of the sigmoid.

Ault, Henry Jason, Dalton, Ga.; Atlanta College of Physicians and Surgeons, 1905; member of the American Medical Association; past president of the Whitfield County Medical Society and its secretary-treasurer for many years; one of the founders and on the staff of Hamilton Memorial Hospital, where he died Aug. 8, aged 75, of cerebral hemorrhage.

Barnes, Alvah H., Providence, R. I.; Medico-Chirurgical College of Philadelphia, 1900; member of the American Medical Association; on the staff of the Roger Williams General Hospital; died Sept. 3, aged 78, of acute coronary thrombosis.

Barrett, Virginia MacWethy, San Francisco; University of California Medical School, San Francisco, 1948; senior assistant resident in medicine at San Francisco Hospital, where she died Aug. 29, aged 31.

Benmosche, Moses ✠ New York; Medical College of Virginia, Richmond, 1904; formerly on the faculty of his alma mater; on the staff of Mount Sinai Hospital; delegate to the International Congress on Tuberculosis in Washington in 1908; author of "A Surgeon Explains to the Layman"; died Sept. 5, aged 67, of coronary thrombosis.

Block, Louis Herman ✠ Chicago; Loyola University School of Medicine, Chicago, 1919; member of the National Gastroenterological Association; died Aug. 6, aged 59, of coronary insufficiency.

Bowden, Upton Beall, Pelham, Tenn. (licensed in Tennessee in 1910); formerly county health officer; died Aug. 24, aged 67, of tuberculosis.

Buercklin, F. W., Portia, Ark. (licensed in Arkansas in 1903); died in St. Bernard's Hospital, Jonesboro, Aug. 18, aged 82, of angina pectoris.

Call, Ernest Victor ✠ Lewiston, Maine; Medical School of Maine, Portland, 1904; an Associate Fellow of the American Medical Association; fellow of the American College of Surgeons; past president of the Maine Medical Association; past president of the staff of the Central Maine General Hospital; past president of the Chamber of Commerce; died Aug. 29, aged 75, of coronary heart disease.

Chandlee, William Herbert ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; served during World War I; affiliated with Philadelphia Hospital for Contagious Diseases and the Friends and Frankford hospitals; died Sept. 8, aged 73, of cerebral embolus.

Chandler, Thomas Collins, Caraway, Ark. (licensed in Arkansas in 1906); died in St. Vincent's Hospital, Little Rock, Aug. 21, aged 70, of cerebrovascular accident.

Constable, Canute Gustavus, Detroit; Howard University College of Medicine, Washington, D. C., 1928; member of the American Medical Association; president of the Detroit Medical Society from 1940 to 1942; served as president of the Howard University Alumni Association, Detroit Chapter; affiliated with Parkside Hospital, where he was president of the staff from 1938 to 1942, and where he died July 24, aged 57, of coronary thrombosis.

Corbett, Oliver John, Emporia, Kan.; Louisville (Ky.) Medical College, 1903; also a pharmacist; member of the American Medical Association; past president of the Lyon County Medical Society; served during World War I; on the staffs of Newman Memorial County Hospital and St. Mary's Hospital; died Aug. 24, aged 75.

Corley, Henry Norbert, St. Louis; Marion-Sims College of Medicine, St. Louis, 1896; member of the American Medical Association; died Aug. 22, aged 83, of carcinoma.

Coulter, James David ✠ Portola, Calif.; University of California Medical School, San Francisco, 1933; city health officer; served during World War II; division surgeon for the Western Pacific Railroad and medical superintendent of the Western Pacific Railroad Hospital; died in St. Mary's Hospital, Reno, Nev., Aug. 23, aged 44, of coronary thrombosis.

Crawford, Herbert Pollock, Oklahoma City, Okla.; Jefferson Medical College of Philadelphia, 1894; member of the American Medical Association and the Medical Society of the State of Pennsylvania; died Sept. 3, aged 81.

Creamer, William Henry ✠ Fall River, Mass.; Harvard Medical School, Boston, 1911; fellow of the American College of Surgeons; served on the staffs of Fall River General, St. Anne's, and Union hospitals; died Sept. 1, aged 68, of cerebral thrombosis with right hemiplegia and generalized arteriosclerosis.

Cronk, Charles Herbert, Bloomfield, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1900; member of the American Medical Association; died Aug. 8, aged 90.

Cuncannan, Michael Edward, Grand Rapids, Mich.; Loyola University School of Medicine, Chicago, 1926; member of the American Medical Association; died in St. Mary's Hospital Aug. 22, aged 51, of mitral and aortic stenosis.

Davidson, William Donald, Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1931; member of the American Medical Association and the American Academy of Orthopaedic Surgeons; served during World War II; died in Longview, Texas, Aug. 21, aged 44, of heart disease.

Davis, Herbert Leland, Dallas, Texas; Cleveland University of Medicine and Surgery, 1898; member of the Industrial Medical Association; served during the Spanish-American War; formerly practiced in Cleveland, where he was on the staff of Charity Hospital and a physician for the board of education, the Greyhound Bus Line, and the Cleveland Public Library; died Aug. 11, aged 79, of carcinoma.

Davis, James Clement ✠ Rochester, N. Y.; Bellevue Hospital Medical College, New York, 1887; served during World War I; an Associate Fellow of the American Medical Association; member of the Rochester Academy of Medicine; for many years county jail physician; died in Nyack (N. Y.) Hospital Sept. 3, aged 88, of coronary thrombosis.

Dennee, Howard Arthur, Buffalo; University of Buffalo School of Medicine, 1928; formerly on the faculty of his alma mater; member of the American Medical Association; served during World War II; affiliated with Our Lady of Victory Hospital in Lackawanna, Roswell Park Memorial Institute, and Mercy Hospital, where he died Sept. 4, aged 53.

Dexheimer, Frank Ernest ✠ Columbia, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1924; member of the American Society of Anesthesiologists; on the staff of Boone County General Hospital and the University Hospital, where he died Aug. 30, aged 50, of coronary occlusion.

Ewens, Harry Brown ✠ Eveleth, Minn.; University of Toronto Faculty of Medicine, Toronto, Canada, 1909; served with the Canadian Army overseas during World War I; formerly practiced in Virginia, where he was on the school board and on the staff of Virginia Municipal Hospital; on the staff of More Hospital and Clinic; died Aug. 27, aged 63, of bronchogenic carcinoma.

Filmer, Burnett A., Denver; University of Louisville (Ky.) Medical Department, 1906; member of the American Medical Association; served overseas during World War I; for many years affiliated with the Veterans Administration; at one time manager of the Veterans Administration headquarters in Honolulu, Hawaii; died in the Veterans Administration Hospital, Fort Logan, Aug. 14, aged 72, of coronary occlusion.

Freney, John Daniel, Waterbury, Conn.; Long Island College Hospital, Brooklyn, 1893; in 1916 received an honorary LL.D. from Niagara University in Niagara Falls; served on the staffs of Waterbury Hospital and St. Mary's Hospital, where he died Aug. 11, aged 80, of intestinal obstruction due to cancer.

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Grant, John W., Dickson City, Pa.; Medico-Chirurgical College of Philadelphia, 1907; member of the American Medical Association; died Aug. 16, aged 81, of arteriosclerosis.

Hamrick, James Yates Jr., Boiling Springs, N. C.; Columbia University College of Physicians and Surgeons, New York, 1915; member of the American Medical Association; died in Rutherfordton (N. C.) Hospital Aug. 22, aged 61.

Hendrix, Maecenas Benton ✠ Memphis, Tenn.; University of Nashville Medical Department, 1904; fellow of the American College of Surgeons; member of the staffs of Methodist and St. Joseph's hospitals; for many years district surgeon for the St. Louis, San Francisco Railway and St. Louis, Southwestern Railway; died Sept. 1, aged 70, of cerebral hemorrhage.

Hickman, Joel Clyde ✠ Geneva, Neb.; Lincoln Medical College of Cotner University, 1908; president of the Fillmore-Saline Counties Medical Society; served during World War I; died Aug. 11, aged 63, of coronary thrombosis.

Hirrschoff, Ernest August Frederick ✠ Newark, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1918; fellow of the American Psychiatric Association; for many years associated with the Veterans Administration; psychiatric examiner at the Selective Service Induction Center; died in Glen Ridge, Sept. 12, aged 71, of myocardial infarction.

Holland, E. E., Gould, Ark. (licensed in Arkansas in 1903); died in Little Rock Aug. 23, aged 78, of pulmonary edema, and generalized arteriosclerosis.

Kinney, Charles L., Fairmont, W. Va. (licensed in West Virginia in 1905); member of the American Medical Association; past president of the Marion County Medical Society; affiliated with Fairmont General Hospital; served as a member of the county board of education; during World War I was on the county draft board; president of the City National Bank of Fairmont; died Aug. 19, aged 75, of coronary thrombosis.

Kittrell, Thomas Fleming, Texarkana, Ark.; University of Nashville (Tenn.) Medical Department, 1894; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; fellow of the American College of Surgeons; member of the American Medical Association and in 1906 member of its House of Delegates; honorary member of the board of directors of the Texarkana (Texas) Hospital; on the staff of St. Michael's Hospital; consulting surgeon, St. Louis Southwestern Hospital; at one time city physician; died Aug. 14, aged 80, of hypertensive cardiovascular disease.

Kwan, Paul King Won, Ann Arbor, Mich.; University of Michigan Medical School, Ann Arbor, 1934; instructor in anesthesiology at his alma mater; formerly affiliated with Peiping Union Medical College Hospital in Peiping, China; died in University Hospital Aug. 31, aged 51, of carcinoma.

Lefort, Marie Louise, Maplewood, N. J.; born Sept. 26, 1875; Woman's Medical College of the New York Infirmary for Women and Children in New York, 1897; at one time district physician for the board of health of Newark; in 1918 went overseas as head of a unit to care for gassed French soldiers; received many honors for her work among French soldiers, including an officership in the French Legion of Honor; formerly head of the American Memorial Hospital in Reims, France; died Aug. 6, aged 76, of coronary thrombosis.

Lehman, Frank ✠ Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1902; past president of the Bucks County Medical Society; died in Hahnemann Hospital, Philadelphia, Aug. 26, aged 78, of acute coronary occlusion.

Litvin, Philip ✠ Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1929; associate professor of neurology at Georgetown University School of Medicine; served during World War II; member of the American Psychiatric Association; affiliated with Garfield Memorial, Children's, and Georgetown University hospitals; drowned in the Missoula River in Paradise, Mont., Aug. 20, aged 43.

Loomis, Herbert Ellis, Owego, N. Y.; Temple University School of Medicine, Philadelphia, 1940; member of the American Medical Association; served during World War II; died in the Binghamton (N. Y.) Hospital Aug. 19, aged 37.

Maher, Paul Patrick ✠ Medical Director, Captain, U. S. Navy, retired, Lynnhaven, Va.; St. Louis University School of Medicine, 1914; commissioned in the medical corps of the U. S. Naval Reserve Force in 1917 and in the medical corps of the regular Navy in 1918; during his naval career served at many of the naval hospitals in the continental United States, aboard ships of the fleet, and with the Marine Corps; placed on the retired list Dec. 1, 1946; died Sept. 8, aged 61, of cerebral hemorrhage.

Miller, William Estill ✠ South Bend, Ind.; Loyola University School of Medicine, Chicago, 1925; served during World War I and II; died in St. Luke's Hospital Sept. 15, aged 53, of peritonitis, ulcerative colitis, hepatitis, and hypostatic pneumonia.

Monroe, Frazer Fletcher, Youngstown, Ohio; Medical College of Ohio, Cincinnati, 1908; past president of the Medical Association of the Isthmian Canal Zone; at one time health commissioner and assistant chief of medical services in the Panama Canal Zone; served during World War I; on the staff of the Youngstown Hospital; died Sept. 7, aged 69, of cerebral hemorrhage.

Moore, Robert Larry, Ruidoso, N. M.; Southwestern Medical School of the University of Texas, Dallas, 1946; member of the American Medical Association; died July 20, aged 34.

Morgan, Thomas Eccles ✠ Johnstown, Ohio; Ohio State University College of Medicine, Columbus, 1923; affiliated with White Cross Hospital in Columbus; member of the school board, and alderman; died in University Hospital, Columbus, Sept. 6, aged 54, of malignant hypertension.

Morris, George Henry, Oshkosh, Neb.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1907; president of the Nebraska State Bank; died Aug. 24, aged 85.

Morris, Samuel J. ✠ Scranton, Pa.; Maryland Medical College, Baltimore, 1910; died Aug. 16, aged 65.

Morrow, Joseph, Seward, Neb.; Eclectic Medical Institute, Cincinnati, 1892; member of the American Medical Association; formerly professor of principles and practice of surgery, Lincoln (Neb.) Medical College; served on the city council and in 1931 in the state legislature; for many years surgeon for the Chicago and Northwestern Railroad; on the staff of the Memorial Hospital, where he died Aug. 12, aged 81, of cerebral hemorrhage.

Mulvey, John M., Wauwatosa, Wis.; Baltimore University School of Medicine, 1903; died Aug. 17, aged 79, of coronary insufficiency.

Paulsen, Thomas Christian ✠ Baton Rouge, La.; Northwestern University Medical School, Chicago, 1914; served in France during World War I; president of the East Baton Rouge Parish Medical Society and Sixth District Medical Society; formerly physician to the Louisiana State University and medical director of its hospital; died Aug. 11, aged 65, of cerebral hemorrhage.

Pinkerton, Albert R., Amity, Ark.; Gate City Medical College, Texarkana, Ark., 1903; Eclectic Medical University, Kansas City, Mo., 1913; died in Gurdon Aug. 18, aged 76, of congestive heart failure.

Pottinger, William Edward ✠ Morristown, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1930; specialist certified by the American Board of Radiology; certified by the National Board of Medical Examiners; on the staff of Essex County Hospital, Verona, N. Y.; died Aug. 19, aged 48, of myelogenous leukemia.

Pyle, Henry John ✠ Grand Rapids, Mich.; Detroit College of Medicine, 1907; member of the Industrial Medical Association; past president of the Michigan Association of Industrial Physicians and Surgeons and of the Kent County Medical Society; affiliated with Blodgett Memorial Hospital; physician for the Nash-Kelvinator Corporation for many years; died Aug. 27, aged 69, of coronary occlusion.

Reardon, John Paul ✠ Cohasset, Mass.; Harvard Medical School, Boston, 1929; certified by the National Board of Medical Examiners; member of the New England Obstetrical and Gynecological Society; formerly county medical examiner; on the staff of the South Shore Hospital, Weymouth; died in Tobey Hospital, Waltham, Aug. 27, aged 50, of cerebral hemorrhage.

Robertson, George Washington, Magnolia, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; member of the American Medical Association; served on the town council, on the school board and at various times as health officer of Pike County; chief of staff, Beacham Memorial Hospital; for many years local surgeon for the Illinois Central Railroad; member of the board of directors of Citizens Savings Bank; died Aug. 6, aged 78, of coronary occlusion.

Russell, Herman Cady, Flushing, N. Y.; University and Bellevue Hospital Medical College, New York, 1912; formerly an instructor in surgery at his alma mater; served during World War I; adjunct surgeon to Bellevue Hospital in New York; died Aug. 6, aged 62, of carcinoma of the esophagus and diabetes mellitus.

Rutherford, Albert Greenway, Huntington, W. Va.; University of Tennessee College of Medicine, Memphis, 1900; member of the American Medical Association; served as surgeon for the Norfolk and Western Railway; at one time superintendent of the Welch (W. Va.) Emergency Hospital; died Sept. 6, aged 74, of coronary occlusion.

Sage, Annie White, Chicago; Woman's Medical College, Chicago, 1890; died Sept. 17, aged 92, of hypostatic pneumonia, carcinoma of the nose, and arteriosclerosis.

Seashore, Gilbert, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; member of the American Medical Association; for many years county coroner; died Aug. 1, aged 77, of cerebral hemorrhage.

Segall, Isadore Sidney, Chicago; University of Illinois College of Medicine, Chicago, 1913; member of the American Medical Association; member of the city board of health for many years; on the staffs of the Walther Memorial, Kenner, and Chicago Physicians and Surgeons' hospitals; died in Presbyterian Hospital Aug. 10, aged 63, of agranulocytosis, chylothorax, and Hodgkin's disease.

Sherman, Julius ✠ San Francisco; University of California Medical School, San Francisco, 1916; affiliated with Mount Zion, Stanford, and the University of California hospitals; died in the Palo Alto (Calif.) Hospital Aug. 24, aged 60, of acute coronary thrombosis.

Shreffler, Arthur Lee, Joliet, Ill.; Northwestern University Medical School, Chicago, 1911; fellow of the American College of Surgeons; past president of the Will-Grundy Counties Medical Society; at one time on the faculty of his alma mater; formerly on the staff of Wesley Memorial Hospital in Chicago; served as chief of surgery at Silver Cross Hospital, where an operating room was named in his honor, and where he died Aug. 10, aged 66, of carcinoma of the stomach.

Simons, James S., Lyons, Ind.; Louisville (Ky.) Medical College, 1894; member of the American Medical Association; died Sept. 8, aged 86, of myocarditis and hypertrophy of the prostate.

Smith, Andrew, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1906; member of the American Medical Association; for many years county physician; served as vice-president of the Tennessee State Medical Association; affiliated with Knoxville General Hospital, where he had been superintendent; died in Holston Hills Sept. 5, aged 71, of coronary occlusion.

Smith, Bion Elmer, Angola, N. Y.; Niagara University Medical Department, Buffalo, 1895; served on the staff of Millard Fillmore Hospital in Buffalo; died Sept. 1, aged 90, of cerebral hemorrhage.

Stephens, Oliver Zuinglis, Stewardson, Ill.; Northwestern University Medical School, Chicago, 1904; died Aug. 17, aged 81.

Stratton, Samuel O., Lincoln, Mo.; Louisville (Ky.) Medical College, 1893; died in St. Luke's Hospital, Kansas City, Mo., Aug. 28, aged 80, of subacute bacterial endocarditis and carcinoma of the stomach.

Taylor, Quintard ✠ White Sulphur Springs, W. Va.; Atlanta College of Physicians and Surgeons, 1914; died Aug. 30, aged 63, of coronary thrombosis.

Teschan, Rudolf Arnold, Milwaukee; Marquette University School of Medicine, Milwaukee, 1929; on the staff of Deaconess Hospital; died Aug. 10, aged 47, of coronary occlusion.

Threlkeld, George Wigginton, Mount Washington, Ky.; Hospital College of Medicine, Louisville, 1900; also a graduate of a law school; member of the American Medical Association; for many years affiliated with the Veterans Administration and served on the staffs of various Veterans Administration hospitals; died in Kentucky Baptist Hospital Aug. 14, aged 76, of carcinoma of the esophagus.

Thurlow, Ralph Moody, Charlotte, N. C.; the Hahnemann Medical College and Hospital, Chicago, 1914; member of the American Medical Association and the Missouri State Medical Association; served during World War I and II; died Aug. 14, aged 60, of coronary thrombosis.

Tyrrell, Esther M., Kingston, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1894; formerly practiced in Canton, Ohio, where she was affiliated with Aultman Hospital; died in Wyoming Valley Hospital, Wilkes-Barre, Aug. 28, aged 94, of fracture of the right femur and cardiorenal disease.

Waldner, John Louis ✠ Loveland, Colo.; Jefferson Medical College of Philadelphia, 1906; served on the staff of Larimer County Hospital; died Aug. 19, aged 70, of coronary thrombosis.

Wallen, Jacob, Philadelphia; Jefferson Medical College of Philadelphia, 1925; on the staff of Jewish Hospital, where he died Sept. 2, aged 49, of injuries received in an automobile accident.

Walton, James Howard, Arlington, Va.; Baltimore Medical College, 1907; member of the American Medical Association; served overseas during World War I; on the staff of Arlington Hospital; died Aug. 7, aged 67, of coronary thrombosis.

Wilkinson, Darrell Denver ✠ Wyco, W. Va.; Medical College of Virginia, Richmond, 1929; died Sept. 3, aged 50, of coronary occlusion.

Williams, Lester L., Spruce Pine, N. C.; Maryland Medical College, Baltimore, 1913; member of the American Medical Association; at one time associated with the state board of health; received an honorary degree of master of public health from Johns Hopkins University, Baltimore, in 1940; died Aug. 2, aged 61, of carcinoma of the lungs and liver.

Williams, Rutherford Marcus, Chicago; Howard University College of Medicine, Washington, D. C., 1918; died Aug. 22, aged 74, of coronary heart disease.

Willis, Floyd Williams ✠ Chicago; Meharry Medical College, Nashville, Tenn., 1913; for many years on the staff of Provident Hospital; died in Pittsburgh Aug. 17, aged 66, of heart disease.

Wilson, Le Roy Alvin, Michigan City, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; member of the American Medical Association; affiliated with Clinic Hospital, where he died Sept. 26, aged 75, of cerebral hemorrhage.

Wilson, Samuel Milliken, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; served during World War I; died in Bayville, N. J., Aug. 10, aged 84, of Parkinson's disease and arteriosclerosis.

Wolfe, Lewis E., New Berlin, Pa.; College of Physicians and Surgeons, Baltimore, 1891; member of the American Medical Association; died Aug. 31, aged 85, of chronic nephritis.

Wuist, J. Frederick, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1901; past president of the Ohio State Medical Board; served as director of the People's Bank of Dayton; died Aug. 28, aged 75.

Wyckoff, Wilson Henry, Bedford, Ohio; Cleveland Homeopathic Medical College, 1902; formerly mayor of Bedford and at one time member of the city council; one of the founders and chief of staff of the Bedford Municipal Hospital, where he died Aug. 18, aged 76, of strangulated hernia and cardiovascular renal disease.

Xelowski, Thaddeus Zigmund ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; fellow of the International College of Surgeons and of the American College of Surgeons; on the staff of St. Mary of Nazareth Hospital; died Aug. 30, aged 74, of coronary thrombosis and carcinoma of the prostate.

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GOVERNMENT SERVICES

ARMY

Rail Evacuation of Wounded in Korea.—Since the early days of the war in the Far East, Army hospital trains and their staffs of physicians, nurses, and technicians have been transporting United Nations casualties from forward-area clearing stations to station hospitals or airfields in Korea. Hospital trains have also played an important role in transporting patients within Japan. The unique advantage of hospital trains is that they make it possible for a patient to receive uninterrupted medical, surgical, and nursing care under almost ideal conditions while he is making the long trip from the forwardmost field medical installations to large station and base hospitals.

Rail evacuation is now being accomplished in Korea with 62 Army hospital ward cars, rushed from this country shortly after fighting broke out, and a large amount of remodeled Korean rolling stock. American-made cars can be operated in the combat theater because Korean rail lines, built by Americans or American-trained Japanese engineers, are of standard gauge. The standard communications zone hospital train consists of 13 cars, including eight ward cars, one kitchen, dining room, and pharmacy car, one officer personnel car, two orderly cars, and one utility car. Hospital trains are operated and maintained by Transportation Corps technicians. They are staffed by personnel of the Army Medical Service.

Rail transport of casualties within the United States, now largely replaced by air facilities, will be resumed on a mass scale as soon as the new interior zone cars are ready. The program is designed to relieve the burden on air transport in case of all-out war or a stepped-up civil defense program.

NAVY

Revision of Flight Training for Flying Navy Doctors.—Student Flight Surgeons at the Naval School of Aviation Medicine, Pensacola, Fla., now receive indoctrination both in fixed and rotary wing type aircraft. Beginning with dual instruction in the primary maneuvers of flight, they proceed to indoctrination in precision maneuvers, acrobatic flight, and familiarization with instrument flight under the hood. They are then introduced to formation flying and to standard gunnery runs. A tactical cross-country flight introduces to them the problems of night navigation. To appreciate the responsibilities of the carrier pilot, each doctor makes one carrier take-off and one landing in company with an experienced pilot. For one week these doctors are students at an air field, near Pensacola, where they are familiarized with the helicopter cockpit, instruments and controls. The use of stretchers and the emergency care of wounded is stressed. Accompanying this comprehensive flight familiarization is appropriate group school instruction. Communications, aeronautical engineering, flight support operations, emergency equipment and flight emergencies, rescue procedures, and strategy and tactics are included in the doctors' training. This revision of flight indoctrination training is a step in keeping the Naval Flight Surgeon abreast of developments in Naval aviation.

AIR FORCE

The DDT Spray Program in Korea.—Experience in Korea in 1950 indicated that insect-borne diseases are endemic and might easily become epidemic in the wake of the war, if insect control measures were not practiced. A program for aerial spray in the Korean theater was proposed early in 1951 by Colonel Kelly, because of the high incidence of mosquito and fly-borne diseases among UN forces in Korea. With the cooperation of the Eighth Army, Fifth Air Force, and 315th Air Division and coordination by Headquarters, Far East Air Forces, the program was organized.

The spray unit, as originally organized by Major William M. Wilson, entomological pilot, consisted of three C-46 aircraft, which began flying operational spray missions June 17 over a series of targets, at 21-day intervals. Two additional ships were modified for future use. The C-46 schedule was modified in July to insure spraying of all stations once every 14 days rather than the original 21. Because of the environmental conditions and the consequent rapid rebuilding of fly populations in Pusan, Taegu and Seoul after spraying, these three cities were scheduled every seven days. At the conclusion of the season, there were 25 scheduled targets. Special missions were flown to the Munsan-ni Peace Conference delegate area and the Uijongbu supply routes. The program was expanded to include spraying the front line areas. Four L-5 aircraft were used to supplement the C-46 phase of the program.

Entomological crews supplied by the Eighth Army were flown to the various areas of South Korea and surveyed the areas to be sprayed. They briefed the Fifth Air Force spray crews, who do the actual spraying from the air. A 20% DDT emulsion was used, and areas were sprayed with one quart to the acre. The most extensive military spray program ever operated was completed in the middle of October, when the last spray mission was flown.

A C-46 of the Korean DDT spray program flies 50 ft. above the damaged dome of the Korea Capitol Building in Seoul.

In the five months that the program was in operation in 1951, the multiple and single-engined ships combined flew more than 430 missions, sprayed about 370,000 acres, dumped more than 100,000 gallons of DDT spray, and logged about 550 hours in the air.

The program can be considered a success. There was an extremely low number of clinically diagnosed arthropod-borne diseases among Air Force personnel in Korea. There was a low malaria rate and an almost negative Japanese B encephalitis count. There were no known deaths in the Korean theater attributable to arthropod-borne diseases. Psychologically, the program was very important as a morale builder and as a reminder to the ground troops that they had to help maintain control measures by continuing their ground program.

Plans are being made for the continuance and expansion of this program in the Korean theater in 1952. Targets are being mapped, pilots are being trained in low-flying techniques, steps are being taken to tighten the 1951 program, and new (revised) Standard Operating Procedures, based on experience gained from this year's program, are going into print.

The war against the North Koreans may end, but the battle against the insects will continue. So long as the Eighth Army can supply the spray and the Far East Air Forces can supply the pilots, every Monday, Tuesday, and Wednesday all next summer, this battle will continue 100 ft. overhead all over South Korea.

FOREIGN LETTERS

LONDON

Problems Arising out of National Health Service.—The *British Medical Journal* supplement for September 1 was devoted to medicopolitical problems arising out of the institution of the National Health Service in Britain and contained many letters from physicians employed in the national health scheme. These letters revealed a multitude of problems with which these medical men are faced, and, on the whole, they reflected an attitude of frustration. There seems to be an underlying query, "Why can't we be left alone to get on with our work, and why can't we be given reasonable conditions of salary and freedom from petty controls?"

Dr. Alistair McI. Smith, of Port Ellen, Argyll, Scotland, writes that throughout the Highlands and islands area, under their particular scheme of service, the physicians were provided with rent-free houses. However, Dr. McI. Smith says he has received a circular letter saying that the secretary of state for Scotland sees no reason why he and other similarly placed physicians should not pay rent and rates. The letter demands a quarter's rent in advance and encloses a form of agreement to be signed by the physician, which accepts certain restrictive conditions, chiefly payment of rental with the right of the secretary's department to increase this payment at any time. Dr. McI. Smith thinks this is a shameful, unilateral repudiation of the terms of service under which he was appointed to this particular parish by the minister of health in 1950. He expresses the hope that physicians in the area, similarly affected, will repudiate this disgraceful procedure and refuse to sign the proposed agreement, which grants the secretary of state for Scotland the full rights of a private owner of the physicians' houses, while the physicians themselves abandon their tenancy rights.

Dr. Kathleen Scott, of Harrogate, wrote in protest against the present trainee scheme. Judging from the advertisement columns it seemed to her there were far more vacancies for trainee assistants than for permanent assistants or partnerships. This being so, Dr. Scott wondered what was happening to the many trainees who had completed their 12 months' training and were now awaiting appointment to permanent posts, very few of which were available. She said that one hears on every side, with truth, of the overworked physician, but under present conditions few can afford the help they need except from a trainee. This is satisfactory for the senior physician, but it is difficult for the young physician, who, having completed his hospital appointments, his military service, and his traineeship, is now ready to settle down and take his place in general practice. Dr. Scott said that during the last 10 months she had answered many advertisements in the *British Medical Journal* for assistantships. In only two cases had she received a reply. She thought that an applicant for an assistantship was at least entitled to some notification, however brief, that the post had been filled.

Dr. K. B. Thomas, of Birkenhead, said that much has been heard about the lowering of the general practitioner status during the last three years. This state of affairs has often been attributed to poor payment of the physician under the National Health Service. Although the correspondent agrees that family physicians should be paid more for their work, he cannot see how an increase in salary would improve their status in the eyes of the public. As a practicing family physician, Dr. Thomas said he was being taken more and more for granted. Many of his patients merely crowded his surgery to make a convenience of him to get aspirin and aperients. His standard of work was falling because of the many persons he had to see whose wants were trivial. The thing he most deplored was the patient's lack of a sense of personal responsibility. Persons come to him and call him to their homes for the most trivial reasons. Because the health scheme is free, their demands are insatiable, and they place no value on the services they receive.

Dr. Thomas philosophically dismissed these annoyances as being within the scope of human nature and behavior, but he did think there should be a charge for service rendered, a charge that patients could reasonably be expected to pay but large enough to discourage them from asking for a sheaf of prescriptions for every real and imagined ailment. The corrspondent agreed with Mr. A. Lawrence Abel, who, in his address "The Pitfalls of Planning," suggested "token payment" for medical services.

The items in these letters are contributed by regular correspondents in the various foreign countries.

NORWAY

Unhealthful Diet of Norwegian Merchant Seaman.—The committee appointed to investigate the much criticized dietary of the Norwegian merchant seaman was presided over by the head of the Norwegian public health service, Dr. Karl Evang. Serving on this committee were other medical experts and representatives of seamen's associations and shipowners, and a detailed study was made of the dietary of 49 ships in the merchant service. A report by this committee contains many constructive suggestions. The merchant seaman eats too often and too heavy food which is not handled as efficiently as it should be. Too much coffee is drunk; ships' cooks are not always masters of their art; and the cost of the raw material is too high. On more than 90% of the ships the midday meal included meat more than four times a week, and on 75% there was a hot evening meal, including meat or fish, at least six times a week. On almost 90% there was a hot meal of meat, bacon, or fish for breakfast at least every other day. When there was no hot evening meal, there was an assortment of cold dishes with an ample choice of meat and pork.

The committee recommends cutting down meals from five to three a day so as to space them better and allow longer intervals for digestion. A six-week dietary is outlined, and it is devised so that two heavy meals in the same day can be avoided. A concession is made to the seaman's well-known preference for a meal of salt meat, peas, and bacon, so that it is served at least once a week. Fresh fruit or a fruit salad should be provided for every breakfast, and salads containing uncooked vegetables and salt herring should be served at every evening meal. The margarine eaten should be guaranteed to contain vitamins added to it according to Norwegian standards. Directions are given for the baking of bread, and it is suggested that experts on cold storage should formulate plans for the improvement of this service. As for the kitchen staff, the desirability of a 10-week course of training for beginners is recommended. There is a need for an up-to-date, officially approved textbook for use in schools for ships' cooks and stewards, who should be expected to pass examinations conducted on a more uniform system than hitherto. Medical experts are invited to prepare an educational pamphlet on dietary at sea, worked so as to be easily understood. The committee recognizes the need for a voluntary revolution in the seaman's dietary and hopes that both officers and men will realize that in many cases the menu on Norwegian merchant ships is today directly injurious to health, reducing efficiency and shortening life.

Enlargement of the Norwegian Radium Hospital.—Reference has already been made in these columns (March 17, 1951, p. 838) to this hospital, in which most of the radiologic treatment of malignant disease in Norway is centered. As often happens, this hospital was created by private initiative backed by voluntary contributions, but as it has grown in importance it has assumed a national character and is coming more and more under public control.

It started modestly, with only 75 beds, in 1932, a few kilometers outside Oslo. In addition to a general department, there

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was a special gynecologic department. In 1940 the number of beds was increased to 110. This number was still inadequate, and of late years resident accommodation has been found for some 125 patients. This overcrowding has inevitably been associated with a long waiting list, and there has been an admission delay of three to six weeks for many patients.

Soon after World War II, steps were taken to increase the number of beds available for patients requiring radiologic treatment for new growths. A committee appointed by the head of the public health service to investigate and report on the many aspects of this problem has not succeeded in presenting a unanimous report, but a majority report is certain to carry considerable weight. Commenting on this report, Dr. Axel Scheel, who is in charge of one part of this hospital, points out how difficult it has been to decide between enlarging the Norwegian Radium Hospital on its original site and moving it so as to make it part of the State Rikshospital, which in its turn may have to be shifted from the center to the periphery of Oslo. However, it looks as if the Radium Hospital will be enlarged on its original site. Some 15 million kroner, or about two million dollars, have already been contributed by the public toward the enlargement of the hospital, which will ultimately contain 150 beds for radiologic treatment, 50 beds for radiosurgical treatment, and 100 beds for radiogynecologic treatment—a total of 300 beds. With Bergen contributing 60 radiologic beds, Trondheim (the third largest town in Norway) contributing 20 to 30 beds, and the old Rikshospital in Oslo contributing over 20 beds, there should be altogether about 400 beds for the radiologic treatment of cancer in the whole of Norway. When the newly created National Association Against Cancer has completed its system of cancer registration for the whole of Norway, it will be easier than it is at present to calculate the hospital accommodation necessary for cancer patients.

Doctors' Earnings Then and Now.—The public seems to be under the impression that the earnings of general practitioners in Norway are most enviable. A useful corrective of this false impression is to be found in a report issued in July, 1951, by Otto Hiorth, an expert on social problems, who has undertaken a searching analysis of the economic status of general practitioners in 1938, in 1948, and in 1951. Such a study is apt to be confusing by virtue of the wealth of information produced. There is also no common denominator by which a fair comparison can be made among the doctors of different countries. There are, however, certain facts in this report which catch the eye and show at a glance how hard hit the general practitioner is by the social revolution of today.

In 1929 the capital of the average doctor was kr. 69,000, whereas in 1948 it was down to kr. 66,000. In other words, the doctor of today is less able to save capital out of his income than his colleague of 1929. In this year he could expect a 5% yield on his capital, whereas in 1948 he could not expect a higher yield than 2.5%. In the same report an analysis is published of the 14 main expenses a doctor has to incur professionally, from the rent of offices to the running of a motor car or motor boat. In 1938 these expenses amounted to kr. 6,000, whereas in 1951 this figure was more than doubled. Another calculation shows that between 1938 and 1951 the work required of the average general practitioner had risen by 38%. So, though his total income (of a much devalued currency) has risen in this period, the return per work unit has actually diminished. Indeed, were it not for the greater amount of work now done by the average doctor, his income would not be above that of a manual laborer. Hiorth concludes that, though the doctor works so much harder than he used to, his "real" income has fallen by 25 to 30%. Evidently the improved conditions under which the working classes now live have been achieved at the cost of the middle class and intellectual workers; among these, doctors have suffered most.

A New Medical Publication.—Since January of 1951 a new medical publication, *The Journal of the Oslo City Hospitals*, has appeared as a monthly publication. The editorial committee is composed of Prof. Carl Semb, Dr. Kristian Kristiansen, and Dr. Axel Aubert. The publisher is Kristian Plesner, a firm that supplies hospital and medical equipment. This journal is modeled on the *Proceedings of the Staff Meetings of the Mayo Clinic*, and the hospitals it serves are the Oslo City Hospital at Ullevaal, the Vardaasen Sanatorium, and the Dikemark Asylum. In these hospitals there are about 220 physicians and about 4,000 beds. The articles in this publication report the weekly staff meetings at Ullevaal and similar meetings at the other hospitals. The fortnightly meetings dealing with medical and surgical chest problems are also to be reported.

MEXICO

Fourth Centennial of the University of Mexico.—The University of Mexico is considered the oldest in America, and the University of Lima, Peru, next oldest. The University of Mexico was established by royal decree in 1551; dedication ceremonies took place on Jan. 25, 1553, and classes were initiated June 5, 1553.

The first units of the new university city were completed for the 400th anniversary celebration in September, 1951, at which time honorary degrees were conferred on world personalities and a scientific congress took place. The university city comprises a series of buildings and units, administrative offices and faculties, and students' quarters, all of them now scattered in Mexico City, mainly in its old sections. This project, which should be completed next year, probably has no parallel in majesty and boldness of conception.

Honorary degrees were bestowed on a group of Mexican and foreign personalities in literature, philosophy, arts, and sciences. Honored guests in the scientific field were Paul Rivet, Manuel Gamio, Norbert Wiener, Otto Struve, Solomon Letshetz, Alfred Kidder, Garret Birkhoff, Harlow Shapley, and Everett Degolyer. Bernardo Houssay, Hans Kelsen, Karl Terzaghi, and Sigval Linne received degrees but were unable to attend the ceremonies.

The scientific congress was comprised of four divisions: physics and mathematics; biology and medicine; sociologic sciences; and psychologic and philosophic sciences. In all, 1,274 papers were presented, 600 in the division of biology and medicine. The meetings of this division took place at the Instituto de Cardiología, the Hospital de Enfermedades de la Nutrición, the Hospital Infantil, and other major hospitals. Guests from the United States included George W. Thorn, William Dameshek, George T. Pack, Louis Katz, and Guzman Barrón. There were also guests from Latin America, Europe, and India.

Children's Hospital, Mexico City.—Almost since its founding, in 1943, the Children's Hospital has had an excess of applications for internships, assistant residencies, and residencies. Despite the fact that the required qualifications for candidates have been high, the institution was obliged in 1947 to increase its number of interns from 16 to 26. This measure was insufficient, and the authorities of the hospital had to devise, in cooperation with the Graduate School of the Universidad Nacional, a new plan for the whole postgraduate teaching of pediatrics, which went into effect in August. This program has three stages, not necessarily successive, which, from the academic standpoint, lead to degrees of (1) university physician specialist in pediatrics, (2) master of pediatrics, and (3) doctor of pediatrics. Those stages correspond, from the hospital point of view, to (1) intern, (2) resident, and (3) chief resident.

The requirements for the degree of university physician specialist in pediatrics, maximum capacity, 40 students, i. e., 40 interns, are a two-year internship; a 420-hour course in pediatrics, to be given also at the Children's Hospital; a thesis on a subject of clinical investigation; and a final examination. For the degree of master in pediatrics, only five of the best students with the degree of university physician specialist in pediatrics will be admitted to candidacy. The requirements for the degree are a two-year residency; an advanced four-semester course in pediatrics at the Children's Hospital; original research, which will be accepted as a thesis; and a final examination. The primary requisite for the degree of doctor of pediatrics is the degree of master of pediatrics, and only two candidates will be accepted. This program involves two years as full-time chief resident, participation in the academic activities of the hospital during the same two years, and the completion of research work of some importance.

CORRESPONDENCE

ADDITION OF FLUORIDE TO WATER

To the Editor:—More than two years ago, after a careful review of the subject, the Board of Directors of the American Water Works Association released an official statement of opinion concerning fluoridation of public water supplies. This was the first statement of policy on the subject released by any association having an interest in the subject.

In May, 1951, the Board again reviewed the situation and adopted the following statement:

"Two years ago (June, 1949) in convention in Chicago, the American Water Works Association adopted by resolution this statement of policy with reference to the fluoridation of public water supplies: 'In communities where a strong public demand has been developed and the procedure has the full approval of the local medical and dental societies, the local and state health authorities and others responsible for the communal health, water departments or companies may properly participate in a program of fluoridation of public water supplies.'

"The past two years have shown this position to be sound. It is now reaffirmed. Recommendations for fluoridation are the prerogatives of the dental, medical, and public health groups. When the proper authorities approve the treatment, it then becomes the function of the water works utility and industry to follow through willingly and intelligently where proper controls are assured."

The policy established by the Board of Directors has not been clearly understood by some and this letter is intended to clarify the matter. The American Water Works Association is an organization of engineers, administrators, and staff personnel engaged in or interested in the furnishing of public water supply. It is not an organization of professional men in the fields of dentistry and medicine. It has expressed itself plainly as ready and willing to cooperate with dental and medical men who advocate fluoridation. It does not promote fluoridation. Our officers and directors feel that recommendations concerning the application of the procedure at the local level properly stem from the dental, medical, and public health groups. Your understanding of this position is hoped for. Your cooperation in disseminating this information is requested.

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521 Fifth Ave., New York 17.

PAREGORIC AS AN ANTIDOTE FOR QUINIDINE

To the Editor:—The administration of quinidine in adequate dosage is often the only effective means of terminating ectopic rhythms as well as preventing their recurrence. In a fair proportion of cases, however, the local irritant action of quinidine in the gastrointestinal tract leads to severe diarrhea, which necessitates either discontinuance of the drug or reduction of dosage below an effective therapeutic level. For such patients, the intramuscular administration of quinidine sulfate in propylene glycol at intervals of three to six hours has been recommended by Gluck and associates (*J. A. M. A.* **145**:637 [March 3] 1951). Successful treatment with the same preparation and mode of administration has also been reported in a case of chronic ulcerative colitis in which the oral administration of quinidine for paroxysmal auricular fibrillation invariably provoked diarrhea (Berger, H. H.: *Am. Heart J.* **41**:624 [April] 1951). In this instance, the patient was taught to administer the drug herself by the intramuscular route because of the necessity of continuous therapy.

The intramuscular administration of quinidine in propylene glycol is certainly feasible when the patient is in the hospital, when skilled nursing care is available at home, or when therapy is to be of short duration because of the relative infrequency of attacks. When treatment must be continued indefinitely, however, the prospects are unpleasant for the patient, whether in the hospital or at home. Not all patients can be taught to give an intramuscular injection, and even in the instances where this is possible such a procedure is difficult, painful, and inconvenient. Moreover, quinidine sulfate in propylene glycol does cause some local discomfort whether given by patient, nurse, or physician.

Before one resorts to the intramuscular route when diarrhea develops on oral quinidine therapy, it would seem worth while to attempt to increase the tolerance of the gastrointestinal tract by whatever means possible in order to permit continuance of the oral mode of administration. In this regard, we have had striking success from the simple expedient of administering one teaspoonful of paregoric (camphorated opium tincture) one to three times daily, 15 minutes before the usual oral dose of quinidine. In several cases, this obvious antidote for the drug has made it possible to continue relatively large oral doses (up to 48 grains per day) for many months without untoward effect. Freedom from toxic symptoms and normal findings on examination of the stools appear to indicate that this method is without danger when gastrointestinal symptoms alone present an obstacle to further treatment. In most instances, after one or two weeks on this regimen, it has been possible to reduce the dosage of paregoric to one teaspoonful daily without return of diarrhea.

We therefore agree that "propylene glycol makes quinidine injectable" but wish to point out that where possible it would be better to employ some agent like paregoric to make it "ingestible."

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LISTINGS AT NEW YORK EYE AND EAR INFIRMARY

To the Editor:—This is in reference to residency listings in THE JOURNAL of Sept. 29, 1951, page 426, ophthalmology, and page 432, otolaryngology. Under each of the two specialties the New York Eye and Ear Infirmary listing is "inpatients treated, 6,404," and "outpatient visits, 126,254." These figures, as shown in their published annual report for 1950, in each case include the combined totals of both services.

There appears to be no doubt that this is an unintentional error, probably due to the fact that in listings for 1949, and perhaps previous years, the combined total of inpatients was centered on two columns, whereas the outpatient visits were shown separately for each department. Nevertheless, the current listing is misleading, because the two specialties are now listed separately in THE JOURNAL and a candidate for either might well accept the figures as applying to the heading under which they appear.

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ALKALOSIS AND HYPERVENTILATION

To the Editor:—The recent clinical note on "Alkalosis Due to Hyperventilation" published in THE JOURNAL (**146**:1125 [July 21] 1951) contains reports of three persons with marked alkalotic episodes due to hyperventilation. A brief outline of the presenting symptoms is given, followed by the statement that the past history was noncontributory. This is immediately followed by an exhaustive listing of laboratory studies with findings within the normal range.

The report is very valuable and confirms biochemically what has often been suspected. What worries me is a pronounced

emphasis on laboratory findings and disregard of the emotional factors in explaining the etiology of the hyperventilation. The emotional factors are indicated as possible causal mechanisms but quickly dismissed by the statement that the unconscious hyperpnea was present in usually stable persons. No evidence is present to indicate whether these persons were stable or unstable.

The trend in medicine today is toward a unitarian concept of man as a nodal point in a given culture. The methods used to study this include medical, neurological, biochemical, and psychological procedures; they are all varying facets of the study. The medical report should therefore contain some internal consistency and either include all relevant material or omit all irrelevant material, and, if brevity is desirable, noncontributory biochemical material might equally well be omitted.

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BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Governmental Hospital: Right to Exclude Practitioner.—The petitioners filed suit to review an order of the board of supervisors excluding them from the right to practice medicine in a county hospital. From a judgment against them, the petitioners appealed to the Supreme Court of Arizona.

The petitioners were four of the five practicing physicians in Mohave County. Located at Kingman, the county seat, is a county hospital known as the Mohave General Hospital, authorized and directed and maintained under provisions of state law relating to the powers of the board of supervisors in maintaining favorable health conditions. On February 19, 1949, the board passed the following resolution, known as Resolution 111, pertaining to the use of the facilities of the hospital by any doctor: "Resolved that if any doctor using Mohave General Hospital facilities is requested by another doctor, using such facilities, to assist him professionally and that doctor refuses or fails to give such assistance, then such doctor shall not be allowed to use said hospital facilities thereafter, except only for his patients in the hospital at that time." On February 26, one of the petitioners and on August '49 the three remaining petitioners received notifications that they would no longer be allowed to use the hospital with the exception of patients which they were then treating. No charges were preferred and no hearing was given them prior to the notification. A statement was added at the bottom of each notice that the petitioners could request a hearing if they so desired. Following these notices, they filed a petition in the superior court of Mohave County in which they alleged the board had exceeded its jurisdiction in finding them guilty of violating the resolution without notice and without trial, that the board had exceeded its jurisdiction in denying the use of the hospital facilities to them, and that the board had exceeded its jurisdiction in the adoption of the resolution for the reason that the resolution was unconstitutional and void in that it was unjust, unreasonable and exceeded the discretionary powers of the board. The trial court, after taking the matter under advisement, issued an order dismissing the petition for certiorari and quashing the writ of stay previously issued.

The respondents contended that the use of certiorari to challenge the constitutionality of the hospital resolution was improper. Their position in this behalf was that the writ may not be used to review the actions of inferior tribunals, boards or officers in the exercise of legislative, executive or administerial functions. We have held, said the Supreme Court, that certiorari raises only the question of jurisdiction and not the erroneous exercise thereof. If the resolution in question, therefore, is so unreasonable and so unjust as to be unconstitutional, then the board in attempting to enforce it was without jurisdiction. The rights of these petitioners were materially and substantially affected by it as were the rights of their patients and of the residents of Mohave County who had need for the use of the hospital's facilities. The Supreme Court, therefore, had to consider the question of the reasonableness of Resolution 111.

The statutes relating to the rights of the board of supervisors in maintaining the county hospital provided, among other things: ". . . Any person other than an indigent who has been admitted to the county hospital may employ without expense to the county a physician or nurse who shall be permitted the necessary use of the hospital facilities and equipment. . . ." It is thus seen that a paying patient has a right to employ his own physician. Does Resolution 111 impinge upon this privilege? If the rule is enforced, the patient is restricted in whom he may employ, for the regulations provide that he may not employ a doctor who has not agreed to assist any other doctor professionally, presumably in the hospital. In other words, the doctor, before he may prescribe for his patient, must first agree that he will aid and assist any other doctor in the hospital, under what terms and conditions we do not know. Presumably, the court continued, he might be required to assist without any assurance of being compensated for his services. He might be required to assist in an operation which in his honest judgment is unnecessary or should be deferred. Undoubtedly any person worthy of the title "physician" or "doctor of medicine" would in a case of emergency or any other situation render professional aid and assistance to the best of his ability without thought of his obligations under his Hippocratic Oath. Such is not the situation here. This regulation enforces his services not voluntarily contracted for or perhaps not desired by the patient, but yet compulsorily enforced upon him. To enforce the rule would enslave him. It is, of course, axiomatic that licensed physicians have no constitutional right to practice their profession in a hospital maintained by state or political subdivisions. It is likewise the general law that municipalities may regulate and control their hospitals and prescribe reasonable rules and regulations to be followed by physicians using the facilities. The statute confers on a paying patient in a county hospital the privilege of employing a private physician without expense to the county and such physician shall be permitted the necessary use of the hospital facilities and equipment. This express provision destroys any implication of a power to exclude physicians from the use of the county hospital except for a non-adherence to reasonable rules and regulations. We are without professional knowledge as to what might be encompassed within the definition of "reasonable rules and regulations." But the regulation under consideration goes beyond and transcends the ordinary and common-place regulations and invades the personal liberty and contractual rights of both the patient and the physician. To accede to the rule by what virtually amounts to compulsion would be repulsive and beneath the dignity of a professional man.

In view of the circumstances surrounding this case, said the Supreme Court, it is apparent that petitioners had no plain, speedy and adequate remedy to protect their rights and fulfill their obligations as physicians in the treatment of their private patients who might be regularly admitted as paying patients. We, therefore, hold that the resolution was unconstitutional; that all action taken under it is and was of no effect. Having reached this conclusion, it is by way of anti-climax to point out that the resolution provided no method for review and that the action of the board in finding the petitioners guilty of violating the rule without accusation, notice or trial, finds no basis under our system of law requiring due process where substantial rights of citizens are infringed upon or destroyed.

Accordingly the judgment of the trial court against the physicians was reversed.—*Findlay v. Board of Supervisors of County of Mohave, 230 P. (2d) 536 (Arizona, 1951).*

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Surgery, Chicago

63:139-278 (Aug.) 1951

*Massive Hematemesis from Hiatus Hernia: Report of Four Cases with Discussion of Etiology. L. Bowden and C. J. Miller.—p. 143.

Prevention of Experimental Lye Strictures of Esophagus by Cortisone. N. Rosenberg, P. J. Kunderman, L. Vroman and S. E. Moolten.—p. 147.

Observations on Use of Preserved Venous Homografts in Experimental Aortic Defects. A. I. S. Macpherson, R. A. Nabatoff, R. A. Deterling Jr. and A. H. Blakemore.—p. 152.

Experimental Right to Left Pulmonary Blood Shunt in Dogs. E. C. Peirce II.—p. 162.

*Aberrant Pancreas: Review of Literature and Report of Three Cases, One of Which Produced Common and Pancreatic Duct Obstruction. S. Pearson.—p. 168.

Papillary Cystadenoma Lymphomatosum. J. R. Brown.—p. 185.

Standard Method for Production of Pulmonary Edema in Dog. G. L. Jordan Jr. and A. Y. DeLaney.—p. 191.

Transorbital Lobotomy in Relief of Intractable Pain. J. M. Williams and W. Freeman.—p. 203.

Appendicoileal Fistula: Complication of Acute Appendicitis with Perforation. J. L. Keeley.—p. 211.

Stenosing Tendovaginitis at Radial Styloid Process (DeQuervain's Disease). A. H. Stein Jr., R. H. Ramsey and J. A. Key.—p. 216.

Experimental Esophageal and Pharyngocervical Fistula. P. F. Ware and C. W. Howe.—p. 229.

Assessment of Gastric Secretory Responses in Relation to Peptic Ulcer: Method of Study and Control Data on 39 Normal Dogs. C. W. Howe, W. J. Porell and P. F. Ware.—p. 234.

Anastomosis of Cervical Esophagus: Experimental Evaluation of Peritoneal Grafts: II. One-Layer Anastomosis. I. Cramer and L. J. Kleinsasser.—p. 243.

Tumors of Bone and Synovial Membrane. H. W. Meyerding and J. G. Bateman.—p. 247.

Hematemesis from Hiatus Hernia.—This paper reports on four patients with massive hemorrhage from hiatus hernia. In three the bleeding followed surgical interventions for completely unrelated lesions. One patient had a tracheostomy which required frequent suction, but continued to have a hacking, nonproductive cough until the onset of complications. Two patients were subjected to frequent oral and tracheal aspirations. The fourth patient had a chest cold, characterized by paroxysms of coughing, during the days preceding his admission. The exaggerated motions and temporary spasms of the diaphragm secondary to the coughing, oral suction, or tracheal aspirations appear to have been causative factors in bringing on the massive hemorrhage from the hiatus hernias, and may have caused at least temporary incarceration of the herniated portion of the stomach, leading to vascular engorgement, with subsequent mucosal necrosis and ulceration and finally massive hemorrhage. Corroborative evidence in support of this belief is furnished by the reports of others, who have treated patients with hiatus hernia by crushing, sectioning, or exeresis of the left phrenic nerve. This procedure paralyzes the left side of the diaphragm and tends to release an incarcerated hiatus hernia. Another possible factor in causing the massive bleeding is the action of retained acid gastric secretions in the incarcerated gastric pouch above the diaphragm. The authors feel that phrenic nerve interruption may be a necessary adjuvant to the customary measures of sedation and blood replacement in massive bleeding from hiatus hernia.

Aberrant Pancreas.—Aberrant pancreas is defined as the occurrence of pancreatic tissue outside its normal anatomic location and without any connection with the normal pancreas. Aberrant pancreatic nodules usually occur in the duodenum and in the stomach but have also been found in Meckel's diverticulum, in the gallbladder, common duct, liver, spleen, and various other sites in the abdominal cavity. All the lesions found in the normally placed pancreas may also develop in the aberrant nodules, but in the majority of cases aberrant pancreas does not produce symptoms, many being discovered only at autopsy. The clinical symptoms produced by aberrant pancreas have been known to simulate and to be mistaken for pyloric and intestinal obstruction, chronic, perforated, hemorrhagic, or malignant gastroduodenal ulcer, gallbladder disease, common duct obstruction, intussusception, pancreatitis, appendicitis, and hypoglycemia. After reviewing cases of aberrant pancreas reported in the literature, Pearson presents three new cases. In one of these, aberrant pancreatic tissue was found in the jejunum, in another in the pylorus. The most interesting case was the one in which aberrant pancreas was found in the ampulla of Vater, producing obstruction of the common and pancreatic ducts. This is believed to be the first case of successful removal of aberrant pancreas situated in the ampulla of Vater.

Alabama State Medical Assn. Journal, Montgomery

21:1-24 (July) 1951

Anesthetic Management of Children. H. R. Elliot, C. A. Nelson Jr., A. Habeeb and E. B. Robinson Jr.—p. 1.

Diagnosis and Early Treatment of Poliomyelitis. W. A. Daniel Jr.—p. 4.

Management of Deafness. E. R. Nodine.—p. 7.

*Renal Failure in Patients Treated with Salt Free Diets. H. L. Holley and J. S. McLester.—p. 9.

21:25-52 (Aug.) 1951

Surgery of Prostate Gland. J. U. Reaves.—p. 25.

Psychotherapy with Children. J. D. Elmore.—p. 29.

Empyema Due to Proteus Rettgeri: Report of Case with Recovery. P. M. Goldfarb and E. De Bakey.—p. 33.

Physical Medicine in General Practice. F. F. Schwartz.—p. 37.

Renal Failure with Salt-Free Diets.—Apparently, rigid salt restriction is not always the innocuous procedure it was once assumed to be. Recently a syndrome has been described that is occasionally associated with salt depletion therapy. It is characterized by drowsiness, weakness, and lethargy, anorexia, nausea, and, occasionally, abdominal and muscular cramps. Renal failure occurs, as evidenced by an increasing depression of urinary output. It has been shown that depletion of the salt content of the extracellular fluid is associated with decreased glomerular flow and that this alteration in renal dynamics results in nitrogen retention. The development of this form of uremia is more likely to occur in patients who have underlying renal damage. The authors report on three patients in whom uremia developed while they were on salt-free dietary regimens for hypertension. In all three cases, the treatment had been continued over a long period and there was some evidence of underlying impairment of renal function. Loss of salt through the skin by way of perspiration contributed to the further depletion of salt, for in each case the onset of hot weather was associated with the production of symptoms. Frequent blood urea nitrogen determinations during the summer months might tell of approaching uremia and thus forestall serious complications. The first patient had been on a low salt diet, which provided less than 1 gm. daily, for about a year. Loss of appetite, nausea, cramps in both legs, and mental confusion had existed for approximately 10 days. Thus, he presented a picture of uremia resulting from progressive renal failure. He was given 5% salt solution parenterally, followed by adequate fluids by mouth, and in this manner a total of 30 gm. of sodium chloride was given. Diuresis ensued, and uremia disappeared. The other two patients presented similar symptoms and responded to the same treatment. The authors conclude that when rigidly observed and long continued, the salt-free regimen is hazardous.

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An asterisk (*) before a title indicates that the article is abstracted.

American Journal of Public Health, New York

41:907-1046 (Aug.) [Part I] 1951. Partial Index

Mortality Index for Use in Place of Age-Adjusted Death Rate. J. Yerushalmy.—p. 907.
Outbreak of Psittacosis (Ornithosis) from Working with Turkeys or Chickens. J. V. Irons, T. D. Sullivan and J. Rowen.—p. 931.
Community Mental Health Program. M. Ross.—p. 950.
Home Accident Prevention: Research Program. W. B. Prothro.—p. 954.
Industrial Hygiene Program in Industry. F. A. Patty.—p. 971.
Epidemiologic Studies in Dental Caries: III. Interpretation of Clinical Data Relating to Caries Advance. J. D. Boyd and K. E. Wessels.—p. 976.
Survey of Literature Relating to Infant Methemoglobinemia Due to Nitrate-Contaminated Water. G. Walton.—p. 986.

American Review of Tuberculosis, New York

64:127-224 (Aug.) 1951

Artificial Pneumothorax: Statistical Analysis of 557 Cases Initiated in 1930-1939 and Followed in 1949: IV. Incidence, Mortality, and Factors Associated with Complicating Tuberculous Empyema. R. S. Mitchell.—p. 127.
Id.: V. Incidence, Degree, and Causative Factors of Pulmonary Contraction or "Unexpandable Lung." R. S. Mitchell.—p. 141.
*Id.: VI. Results in Various Selected Series of Cases. R. S. Mitchell.—p. 151.
Hepatic Toxicity of Amithiozone. A. Falk, L. Zieve, W. B. Tucker and M. Hanson.—p. 159.
*Amithiozone Treatment of Pulmonary Tuberculosis: Pilot Study of 21 Patients. H. S. Sandhaus, D. E. Jenkins, K. L. Burdon and B. Halpert.—p. 170.
Tuberculous Appendicitis: Clinicopathologic Study of 17 Cases. F. A. Jaffé.—p. 182.
Streptomycin-Dependent Tubercle Bacilli. E. A. Doane and E. Bogen.—p. 192.
Use of Rabbit Eye as Tissue to Study Tuberculosis: I. Development of Localized Ocular Lesion. P. A. Bunn and B. Drobeck.—p. 197.
Id.: II. Effect of Certain Antituberculous Agents upon Ocular Tuberculosis. C. V. Adair, B. Drobeck and P. A. Bunn.—p. 207.

Artificial Pneumothorax.—Artificial pneumothorax was induced in 557 patients with pulmonary tuberculosis during the period 1930 to 1939. The patients were followed up for 10 to 20 years. In 58.8% of the patients results were poor, with failure to achieve control of the disease within the first 12 months after induction of pneumothorax, or, following initial control, with a significant reactivation of disease when pneumothorax was discontinued or within three years after discontinuation. Tuberculous empyema occurred in 18.5%, and death occurred in 22.8% at various times during follow-up. Analysis of these data established the following rules for the selection of cases for therapeutic pneumothorax. The roentgenographic shadows in the lungs should be light, "fluffy," and scattered rather than heavy, dense, or grossly confluent. The extent of destruction, as measured by extent of cavitation, extent of presumed caseation, and degree of contraction resulting from old disease, obstructive factors, or both, is a much more reliable guide in the selection of cases for pneumothorax than is cavity size alone. Location of disease need play only a minor role in the selection. Old fibroid disease, cavity in the contralateral lung, and any clinical or roentgenographic evidence of major bronchial obstruction are some contraindications to the use of pneumothorax. In the management of these cases free anatomic collapse should be achieved or the pneumothorax abandoned, but this rule may not be applicable when the adhesions are confined to the area between the lower lung and diaphragm. To achieve a good anatomic collapse, thoracoscopy will be required in approximately 90% of cases. Sudden and persistent contraction and airlessness of a lobe or lung soon after induction is strong indication for the abandonment of pneumothorax and consideration of thoracoplasty. If cavity closure and sputum conversion do not occur within three to four months after pneumothorax, alternative forms of treatment should be considered. When patients with pulmonary tuberculosis are well selected and are given pneumothorax that is well managed, the late results are highly satisfactory. Adherence to these rules for the safe and effective use of pneumothorax will distinctly limit application of the method.

Amithiozone Treatment of Pulmonary Tuberculosis.—Of 21 patients with advanced pulmonary tuberculosis, 10 were treated with amithiozone alone and 11 were treated with amithiozone and streptomycin. The initial dose of amithiozone was 50 mg. given orally each day during the first week. The dose was then increased by 50 mg. weekly until a dose of 200 mg. per day was reached by the beginning of the fourth week. This dose was continued until 120 days of therapy had been completed, with a total dose of 14.7 gm. of amithiozone. The patients who were given combined treatment received amithiozone as outlined above and, in addition, 1 gm. of streptomycin daily in one intramuscular injection during the entire period of treatment. Patients receiving amithiozone alone failed to show consistent improvement by roentgenographic criteria; they did not gain weight, the amount of sputum did not decrease, decline in fever was not constant, and subjective feeling of well-being was lacking. Those patients receiving combined amithiozone and streptomycin therapy tended to improve. No morphological changes attributable to the effect of either amithiozone or streptomycin could be detected in any of the organs of the four patients on whom postmortem was performed. Untoward gastrointestinal, hematological, renal, and hepatic effects, necessitating cessation of amithiozone therapy, were observed in patients of both groups. These effects disappeared rapidly when administration of the drug was discontinued. Strains of Mycobacterium tuberculosis resistant to amithiozone developed in patients treated with this drug alone. No resistant organisms developed in patients receiving both amithiozone and streptomycin, but the number of patients studied is too small to provide proof that the combined therapy can prevent the emergence of strains of M. tuberculosis resistant to either drug.

American Surgeon, Atlanta, Ga.

17:673-792 (Aug.) 1951

Medical Illustration in the Modern Medical Program. O. A. Parkes.—p. 675.
Lymphatic Defect in Hydrocele. J. R. Rinker and L. Allen.—p. 681.
Diverticulum of Urethra in Female. J. R. Rinker.—p. 687.
Primary Reticulum Cell Sarcoma of Lung Arising in Wall of Pulmonary Cyst: Case Report. H. T. Ransdell Jr., A. W. Bailey and R. G. Ellison.—p. 689.
Primary Carcinoma of Fallopian Tube: Report of Two Cases. G. L. Calk and C. M. Phillips.—p. 697.
Pulmonary Embolus: Postoperative Investigation of Trendelenburg Position for Prophylaxis. R. Torpin.—p. 703.
Experimental Studies on Torulosis. Part I: Preliminary Experiments on Therapy. L. O. J. Manganiello.—p. 706.
*Lymphogranuloma Venereum (Inguinale), Precipitating Cause of Carcinoma: Statistical Analysis of 135 Cases of Carcinoma of Penis, Vulva and Anorectum. E. R. Pund and G. R. Lacy Jr.—p. 711.
Malignant Melanoma of Gastrointestinal Tract: Case Report. A. B. Chandler and G. F. Jones.—p. 719.
Clinical Impressions of Two New Intravenous Barbituric Acid Derivatives for Anesthesia. A. J. Waters and P. P. Volpitto.—p. 722.
Reconstructive Surgery of Lip Region. W. S. Flanagin.—p. 735.
Pedunculated Submucous Myomas of Uterus. G. L. Calk and R. Torpin.—p. 744.
Giant Pulmonary Cyst, Simulating Spontaneous Pneumothorax. R. F. Corpe, J. L. Alexander, I. Stergus and A. Cuadrado.—p. 753.
Adrenal Virilism in Three Year Old Girl. R. B. Greenblatt, R. H. Chaney and S. L. Clark.—p. 760.
Fatal Pulmonary Embolism with Special Reference to Pelvic Thrombosis as Origin. J. P. Wilson.—p. 770.
Carcinoma of Cervix Uteri: Simple and Adequate Method for Detection Applicable to Office Practice. J. M. Echols, G. L. Calk and W. S. Boyd.—p. 779.
Anticoagulants in Obstetrics, with Case Report. C. W. Coolidge and R. Torpin.—p. 785.

Lymphogranuloma Venereum and Carcinoma.—Pund and Lacy investigated lymphogranuloma venereum as a precipitating cause of cancer. They reviewed a total of 135 cases of carcinoma of the penis, of the vulva, and of the anorectum, which they had observed since July 1937. Frei tests were not performed in the 50 white patients. Of the 85 Negro patients with penile, vulvar, and anorectal carcinoma, 36% had positive Frei tests. The authors believe that the coexistence of lymphogranuloma venereum in a large percentage of patients with carcinoma of the penis, vulva, or anorectum is not fortuitous. This relationship is not paralleled by any other venereal disease. Syphilis is rarely incriminated as a precursor of genital cancer. Gonorrhea can be considered a negligible factor in the causation of cancer. Errors of diagnosis may occur because "pseudoepitheliomatous" proliferation of the epithelium is commonly observed in granuloma venereum. To determine if the chronicity of chancroid inflammation played any part in the development of carcinoma in this series, the authors tabulated the patients with positive Ducrey antigen tests. While they do not deny the possibility of

cause and effect in chancroid, it is interesting to note that of the 14 patients in this series with positive Ducrey tests, 10 also had positive Frei tests. They believe that persistent lesions of lymphogranuloma venereum should be considered as precancerous lesions and that lymphogranuloma venereum predisposes to carcinoma.

Blood, New York

6:685-776 (Aug.) 1951

Photosensitive or Congenital Porphyria with Hemolytic Anemia: I. Clinical and Fundamental Studies Before and After Splenectomy. R. A. Aldrich, V. Hawkinson, M. Grinstein and C. J. Watson.—p. 685.
Id.: II. Isotopic Studies of Porphyrin and Hemoglobin Metabolism. M. Grinstein, R. A. Aldrich, V. Hawkinson and others.—p. 699
Thrombotic Thrombocytopenic Purpura: Disseminated Disease of Arterioles. G. C. Meacham, J. L. Orbison, R. W. Heinle and others.—p. 706.
Clot Accelerating Effect of Dilution on Blood and Plasma: Relation to Mechanism of Coagulation of Normal and Hemophilic Blood. L. M. Tocantins, R. T. Carroll and R. H. Holburn.—p. 720.
Idiopathic Hypoprothrombinemia Associated with Hemorrhagic Diathesis, and Effect of Vitamin K. A. B. Ley, G. G. Reader, C. W. Sorenson and R. S. Overman.—p. 740.

Bulletin New York Academy of Medicine, New York

27:477-536 (Aug.) 1951

*Portacaval Shunt for Portal Hypertension with Special Reference to Cirrhosis of Liver. A. H. Blakemore.—p. 477.
Influence of ACTH on Sensitizing and Immunizing Antibodies on Inhalant Allergy. M. H. Loveless.—p. 495.
Diagnosis of Testicular Deficiencies. R. S. Hotchkiss.—p. 510.
Humanity of Sir Thomas Browne. J. S. Finch.—p. 521.

Portacaval Shunt for Portal Hypertension.—This paper discusses the rationale of the portacaval shunt for the relief of portal hypertension and presents the results of this treatment in 140 patients, of whom 102 had cirrhosis of the liver and 38 had extrahepatic portal block. The 102 patients with cirrhosis of the liver are divided into two groups: (1) those with relatively healthy livers as indicated by liver function studies and (2) those with evidence of impaired liver function, frequently the result of the deleterious effects of long-standing, severe portal hypertension. There were six postoperative deaths in 52 cases of group 1, with only one death ascribed to liver failure. In the 50 patients of group 2 with severely damaged livers there were 16 postoperative deaths, in 10 of which hepatic failure was the cause. This represents a 68% salvage in that group of patients otherwise doomed to die in a few weeks or months. The fact that nearly two-thirds of the postoperative deaths in group 2 cases were due to liver failure in contrast to but one death due to this cause in the 52 cases belonging to group 1 points to a way of greatly reducing the operative risk in the future, namely, by evaluating cirrhosis patients for the shunting procedure as soon as they show evidence of portal hypertension.

California Medicine, San Francisco

75:73-184 (Aug.) 1951

Psychological Problems of Aging. A. Simon.—p. 73.
The Non-Group Subscriber—A Blue Shield Problem. C. G. Heyd.—p. 81.
Cortisone in Treatment of Bronchial Asthma. M. S. Harris.—p. 85.
Anal Infections Encountered in General Practice. M. R. Hill.—p. 89.
Antihistamine in Prevention of Serum Reaction Following Injection of Tetanus Antitoxin. A. Waxman and H. Geshelin.—p. 93.
Organization and Operation of Study of Diarrheal Disease in Fresno County. W. F. Stein, M. D. Beck, A. C. Hollister Jr. and E. Mortenson.—p. 94.
*Crushed Ice Packing in Treatment of Burns. S. E. Flynn.—p. 97.
Proper Use of Antibiotics in Treatment of Acute Otitis Media. M. H. Rutherford.—p. 98.
Giant Intracanalicular Fibroadenoma: With Report of Five Cases. C. Smith Jr., R. J. Parsons and W. M. Bogart.—p. 101.

Ice Packing Treatment of Burns.—Application of packs of crushed ice in the treatment of patients with severe burns was instituted as an emergency measure aboard a Navy vessel in wartime, when 50 patients were extremely burned in explosions of gasoline and other materials during enemy attack. At the outset, standard methods were employed to overcome shock, relieve pain, and prevent dehydration, but when materials on hand for these measures were exhausted, crushed ice was applied to the damaged areas. Shock and pain were immediately relieved, and the patients had a sense of well-being. Glucose and water was given intravenously. Usually, the chilling packs were kept in place for two or three days. With this treatment, pulmonary edema was of lesser incidence; loss of plasma was diminished; and, possibly, the absorption of dead blood cells and tissue cells was retarded and toxemia thereby reduced. It is also possible that the cold lowered the metabolic demands of the lesions, decreased the amount of necrosis, and retarded bacterial growth and secondary infection. Crushed ice was superior to morphine sulfate in relieving the pain of burns. The author feels that crushed ice packing should be considered in atomic bomb attacks, which could cause serious burns in so many persons that available physicians, using standard methods, could not cope with the problem.

Circulation, New York

4:161-320 (Aug.) 1951

*Hyperabduction Syndrome: With Special Reference to Its Relationship to Raynaud's Syndrome. J. A. Beyer and I. S. Wright.—p. 161.
*Effects of Splanchnicectomy on Blood Pressure in Hypertension: Controlled Study. S. W. Hoobler, J. T. Manning, W. G. Paine and others.—p. 173.
Further Studies of Cerebral Chemoreceptor Buffers as Influenced by Vasoconstrictor and Vasodilator Drugs and Veratrum Viride. R. D. Taylor and I. H. Page.—p. 184.
Cardiovascular Effect of Induced Controlled Anoxemia: Preliminary Ballistocardiographic Study of Normal Subjects and Few Patients with Suspected Coronary Artery Disease. W. R. Scarborough, R. Penneys, C. B. Thomas and others.—p. 190.
Changes in Configuration of Ventricular Chambers During Cardiac Cycle. R. F. Rushmer and D. K. Crystal.—p. 211.
Mechanics of Ventricular Contraction: Cinefluorographic Study. R. F. Rushmer and N. Thal.—p. 219.
Effect of Amytal on Cardiac Output and Peripheral Resistance of Man. P. Winchell, H. L. Taylor and C. B. Chapman.—p. 229.
Cheyne-Stokes Respiration in Patients with Cardiac Enlargement and Prolonged Circulation Time. W. W. Pryor.—p. 233.
Selective Synchronous Recording of Ballistocardiogram and Electrocardiogram on Single Channel. R. Gubner.—p. 239.
Coarctation of Aorta Complicated by Patency of Ductus Arteriosus: Physiologic Considerations in Classification of Coarctation of Aorta. A. L. Joanson, C. Ferencz, F. W. Wiglesworth and D. L. McRae.—p. 242.
Diagnosis of Aortic Septal Defect by Retrograde Aortography: Report of Case. B. M. Gasul, E. H. Fell and R. Casas.—p. 251.
Effect of Pancreatectomy on Lipemia, Tissue Lipidosis and Atherogenesis in Chicks. J. Stamler and L. N. Katz.—p. 255.
Effects of Desoxycorticosterone Acetate on Cholesterolemia, Blood Pressure and Atherogenesis in Chicks. J. Stamler, R. Pick and L. N. Katz.—p. 262.
Water and Electrolyte Metabolism in Congestive Heart Failure. G. E. Miller.—p. 270.
Interrelationships of Cardiac Output, Blood Pressure, and Peripheral Resistance During Normal Respiration in Normotensive and Hypertensive Individuals. A. H. Williams and A. L. Gropper.—p. 278.
Chronic Constrictive Pericarditis. P. D. White.—p. 288.

Hyperabduction Syndrome.—This is a report of 52 patients, 24 males and 28 females, between 16 and 69, with neurovascular symptoms in the arms resulting from or aggravated by prolonged hyperabduction of the arms. In hyperabduction the arms are brought together above the head with or without the elbows flexed. Some degree of external rotation is necessary to achieve this position. The onset of the hyperabduction syndrome appeared to be more closely related to habitual assumption of this position at work or in sleep than to factors coincidental with aging. The majority (34) of the patients slept in this position. All except four had definite evidence of occlusion of the major arteries to the upper extremity in positions of hyperabduction. Symptoms in these four patients were aggravated in the position of hyperabduction, probably because of compression of the brachial plexus. Pain in the shoulder and/or hand was the commonest symptom, occurring in 30 of the 52 patients. Numbness involving the fingers or hand was observed in 26 patients, Raynaud's syndrome was associated with the hyperabduction syndrome in 20 patients, paresthesias were present in 18, discoloration and swelling of hands in 12, weakness in 8, and ulcerations of the tips of the fingers in 2. The most striking finding was the high incidence of Raynaud's syndrome, which was far greater than anticipated in the general population. In some patients elimination of the hyperabduction position abolished Raynaud's syndrome. According to the authors, this relationship has not been previously reported. The hyperabduction syndrome is a commoner cause of shoulder girdle and upper extremity symptoms than is generally recognized. Correct diagnosis of syndromes of the shoulder girdle depends on a careful analysis of all

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the possible causes. The mere observation of poor oscillometric readings in the position of hyperabduction together with occurrence of symptoms in unrelated positions is not sufficient to justify the diagnosis of the hyperabduction syndrome. A causal relationship between the two must be established. Preventive and therapeutic measures consist of maintaining adequate circulation and unimpeded nervous supply to the upper extremities at all times. The pure hyperabduction syndrome can be prevented or eliminated by having the patient avoid the precipitating position during work, play, and sleep. If the syndrome is complicated by some underlying vascular or neurological disease the improved sleeping habits are frequently a valuable asset in the treatment. When the syndrome is associated with anatomic pressures at the shoulder girdle in commoner positions, as the costoclavicular, the cervical rib, or the scalenus anticus syndrome, surgical procedures may be necessary to correct these conditions.

Effects of Splanchnicectomy on Hypertension.—The effects of subdiaphragmatic splanchnicectomy on the blood pressure of 338 hypertensive patients followed for 10 to 18 months after surgical intervention were compared with the effects of nonspecific medical management in a control group of 79 similar patients who did not undergo surgical treatment. Of the 338 patients, 10 died during the operation or a few days thereafter, 21 died during the year following the operation, and 13 were lost to observation. Of the remaining 294 patients, 98 (33%, or 29% of the entire group) showed a reduction in blood pressure greater than 20 mm. Hg, while only 1 of the controls did. Twenty-six (7% of the entire group of splanchnicectomy patients) showed a return to normotensive levels. When 60 patients with the most pronounced reductions in blood pressure were compared with 71 who had poorest results from surgical intervention, no significant differences in the preoperative characteristics of the two groups could be established. Patients with diastolic blood pressure below 110 mm. or hypertensive vascular complications such as cardiac enlargement, cerebrovascular accidents, or papilledema were less likely to have significant blood pressure reductions following surgical intervention. Only a negligible number of the patients whose diastolic pressure returned to preoperative levels by the ninth postoperative day showed significant reduction one year postoperatively. Furthermore, blood pressure reductions in the early postoperative period often returned to hypertensive levels at a later date, so that an ultimate good result was not assured until after one year. Patients who had had good results after one year did not have further elevation in the second postoperative year. Patients in whom the denervation had been extended upward from D-12 to include D-6 or above bilaterally had a better operative result than those in whom the conventional ganglionectomy (D-8 to D-12) had been performed. The response to cold pressor tests was not reduced by operation. Orthostatic hypotension was not encountered, and general postoperative disability was minimal after this type of sympathectomy, while symptomatic relief was as frequent as reported for more extensive operations. While blood pressure reductions were perhaps not so common as those reported to follow other types of sympathetic surgery, the authors believe that the less radical supradiaphragmatic splanchnicectomy has a place in the routine treatment of established hypertensive disease that does not respond to medical management.

Connecticut State Medical Journal, Hartford

15:661-788 (Aug.) 1951

Accuracy of Certain Common Chemical Determinations: Second Survey. J. G. Snavely and W. R. C. Golden.—p. 667.
Personality Disorder as Cause of Chronic Disability. S. P. Seigle. —p. 669.
Rheumatoid Spondylitis. L. C. Kelly.—p. 672.
*Favism. E. Wasserman and R. Chapman.—p. 674.
Role of Internist in Treatment of Alcoholism. B. H. Gottesfeld, N. Mann and E. Conway.—p. 678.
Family Care of Mentally Ill: Community Clinics. E. C. Yerbury.—p. 681.
Normal Blood Pressure Range. H. L. Dwyer Jr.—p. 693.

Favism.—A patient ingested 1 lb. (453.59 gm.) of green, uncooked fava beans. About 32 hours later he became very pale. Within the next few hours severe malaise and generalized weakness developed. A burning, nonradiating, abdominal pain appeared. On the following day, he had a shaking chill and nonbloody diarrhea. He became febrile, and his urine was blood red. Discoloration of the urine persisted for two days. Temperature ranging from 100 to 102 F persisted for nearly two weeks. Anemia and an elevated reticulocyte count, which gradually returned to normal, were other signs of favism. Treatment was symptomatic. Although favism is common in the Mediterranean area, being most prevalent in Sicily, Sardinia, and Calabria, where the bean is common food, it is still considered rare in this country, the case described here being only the 10th so far reported. The fava bean (broad bean, Italian bean, horse bean, Viccia faba) is similar to the lima bean and is eaten raw or boiled. In this country these beans are grown in New York, New Jersey, Illinois, Louisiana, Florida, Mississippi, California, and the New England states. An attack of favism can occur either after ingestion of the raw or cooked beans or after inhalation of the pollen from the flowering plants.

Diseases of Chest, Chicago

20:111-236 (Aug.) 1951

*Value of Exploration in Silent Lung Disease. R. H. Overholt.—p. 111.
Experimental Study of Plastic Synthetics in Thoracic Surgery. S. Levine, J. B. Grow, A. Hurst and H. M. Perlmutter.—p. 126.
Use of Plastic Sponge in Surgical Treatment of Pulmonary Tuberculosis (Preliminary Report). A. Hurst, J. B. Grow, S. Levine and H. M. Perlmutter.—p. 134.
*Endoscopic Approach to Vegetative Nervous System and Its Therapeutic Possibilities: Especially in Duodenal Ulcer, Angina Pectoris, Hypertension and Diabetes. E. Kux.—p. 139.
*Clinical Results and Physiological Effects of Immobilizing Lung Chamber Therapy in Chronic Pulmonary Tuberculosis. A. L. Barach, C. Eastlake Jr. and G. J. Beck.—p. 148.
Interesting Cardiovascular Abnormalities Discovered on Mass Chest Roentgen Surveys. H. Alexander.—p. 167.
Arteriovenous Aneurysm of Lung. H. E. Pugsley and R. M. Janes. —p. 177.
Chondromyxoid Fibroma of Rib: Report of Unusual Benign Primary Tumor. J. Goorwitch.—p. 186.
Acute Generalized Hematogenous Tuberculosis (Miliary) Followed by Tuberculous Meningitis: Report of Case Treated by Prolonged Dihydrostreptomycin Therapy and Bedrest with Survival. M. J. Stone and W. E. R. Greer.—p. 194.
Surgical Rehabilitation for the Coronary Cripple. S. A. Thompson. —p. 204.
What Should Occupational Therapy Be in Tuberculosis Setting. I. Grant. —p. 210.

Exploration in Silent Lung Disease.—Diseases of the lungs can be more easily discovered during their early and silent form than those in any other internal organ. Different pathological processes within the lungs may produce identical x-ray shadows; conversely, the same disease entity may produce different shadows. Surgical exploration and immediate excisional therapy, if indicated, are logical, direct, and safe methods for differentiation of abnormal shadows of unknown origin, and for successful treatment of lesions at a favorable time. In 77 of 200 intrathoracic explorations performed at the Overholt Thoracic Clinic in 1950 it was impossible to establish an absolute diagnosis preoperatively. There were 33 patients in this group in whom an absolute diagnosis of cancer was established only after surgical exploration. In 863 patients with primary cancer of the lung seen by the author during the period 1932-1950, resection could be done in 30% of the lesions 10 months after the appearance of symptoms; 55% of the lesions were resectable in patients in whom surgical intervention was delayed more than three months in the absence of symptoms, and 100% of the lesions were resectable in those who in the absence of symptoms were subjected to prompt surgery. The difference in the chances for survival of the patient subjected to surgical intervention with and without symptoms of cancer of the lung is striking. If the theoretical cure rate is based on whether the lesion is found to be strictly localized, the chances rise from 11 to 75%. When symptoms are present the likelihood of an extrapulmonary extension of the cancer is high and cure rates have been low. When silent cancer is treated promptly, the chances of lymphatic spread are low, and with five year follow-up cure rates should equal or surpass those for any internal cancer. Cancer of the lung is the most favorable of all internal cancers, because its silent shadow appears in survey films, and it can be properly identified and excised in its early and local form.

Endoscopic Approach to Vegetative Nervous System.—A new technique was used for sympathectomy in 500 patients. Pneumothorax was established, and, by means of a thoracscope, a long needle was then introduced through which the sympathetic nerve could be injected or divided by cautery under direct vision at any given point from the caudal portion of the stellate ganglion down to the diaphragm. With a suitable instrument, the sympathetic, including the nerves from below the diaphragm, could then be evulsed. No serious complications were observed. Of the patients operated on by this technique, 110 who had duodenal ulcers were followed up for one and a half years or more. Approximately half of these patients obtained complete healing of their ulcers as demonstrated by x-ray and clinical examinations, while complete disappearance of clinical symptoms in the presence of some residual roentgen signs was observed in about 30%. Patients with less than a four-year ulcer history and failure of previous medical treatment present the optimal indications for endoscopic sympathectomy. Highly satisfactory results were also obtained with endoscopic sympathectomy in carefully selected cases of angina pectoris. The method represents an improvement in the treatment of hypertension, because there is almost no operative risk. Consequently, the indications may be widened. Endoscopic sympathectomy is recommended for certain patients with diabetes mellitus in whom epinephrine secretion can be depressed by sympathectomy with the result of increased insulin sensitivity.

Immobilizing Lung Chamber Therapy.—In 19 of 29 patients with advanced pulmonary tuberculosis arrest of the disease followed use of immobilizing lung chamber therapy for not less than 10 hours a day for four to five months. The course of the disease in these patients immediately before the institution of this treatment revealed progressive extension of the tuberculous process after bed rest, pneumoperitoneum, or streptomycin therapy, the reappearance of cavity after termination of pneumothorax, or failure of benefit from bed rest, pneumoperitoneum, or pneumothorax. Arrest of the disease in these 19 patients was characterized by closure of cavity and negative sputum for periods varying from six months to nine years. Five patients had a relapse after the original chamber treatment, and two were lost to observation. In no instance did a spread of disease take place during immobilizing lung chamber therapy. Good supervision and training during the first 10 days of treatment to achieve continuous arrest of lung movement is important for a satisfactory response. The physiological effects of lung ventilation without lung movement appear related, at least in part, to the unique quality of bodily and mental rest initiated by elimination of the chest movements of normal respiration. In the patients in whom complete arrest of chest movement was produced, there was a pronounced decrease in cardiac impact as measured by the Dock ballistocardiograph, a drop in pulse rate and blood pressure, decreased excretion of potassium in the urine, and an increase in serum potassium resulting apparently from lessened stimulus to the adrenal gland, and an elevation of the T-wave at the time when the serum potassium was increased. Modifications in the technique of treatment now in progress may simplify and improve the results of this therapy.

Geriatrics, Minneapolis

6:209-276 (July-Aug.) 1951. **Partial Index**

Significance of Dietary Cholesterol in Coronary Arteriosclerosis. A. Steiner. —p. 209.
Positive Approach to Management of Cerebro-Vascular Accident. L. Feldman.—p. 214.
*Genesis of Hypertrophy of Prostate. S. W. Mulholland.—p. 227.
Effect of Bile Acids on Atherosclerosis Induced by Cholesterol Sols. O. J. Pollak.—p. 234.
Role of the Psychiatrist in Homes for the Aged. M. H. Hollender. —p. 243.

Genesis of Hypertrophy of Prostate.—Prostatic hypertrophy has been observed only in the human and the dog and it has never been produced in the laboratory. The lesion, occurring spontaneously in dogs, takes the form of a cystic hyperplasia of the periurethral glands, whereas in man a series of fibromyomatous adenomas develop. Age is apparently a necessary etiologic factor, as it does not occur in the young of either the human or canine species. It has never been found in the male castrate and cannot be produced by androgen injection in the aged castrated dog, if castration has been done early. However, as a man grows older, the amount of androgen is lessened, and urinary androgens and estrogens are present in smaller amounts in persons with benign prostratic hypertrophy than in those of the same age without it. The mass of tissue present does not bear a direct relation to the degree of obstruction. Even though 75 to 80% of men past 80 years have enlargement, only 1 to 5% of all persons requiring surgical removal are past 80. Since the glands in the older group are as large as those in men of 65 to 70, the question arises as to whether the mechanism of obstruction is dependent on dysfunction, possibly spasm rather than purely mechanical damming off of the bladder neck. Despite extensive studies in experimental animals on the relation of endocrine factors to the prostate, the knowledge gained has found no practical application to benign prostatic hypertrophy. Although estrogen has a slight effect on the epithelium in benign prostatic hypertrophy, it has no apparent effect on stroma and nodules. Castration has been known to produce atrophy of normal prostatic tissue in animals, and it may have the same effect on the normal tissue that is left in man, but it has no effect on prostatic hypertrophy. The cause of the atrophy of the submucosal glands and of the stroma of the lateral lobes still remains to be explained; it is possible that these are originally sex glands and capable of reacting to sex hormones, but the causal mechanism is not so simple as it might appear. Possibly the prostate has resisted chemical attacks over the years and succumbs only at the same time sex function begins to diminish. Such a theory may explain why malignancy develops in later years, natural resistance holding uninhibited growth in check until that time.

GP (J. Am. Acad. Gen. Practice), Kansas City, Mo.

4:1-180 (Aug.) 1951

Treatment of Hand Injuries. M. J. Dirstine.—p. 32.
The Overweight Child. W. A. Reilly.—p. 41.
Problems of an Aging Population. R. A. Kern.—p. 47.
Diagnosis and Treatment of "Spotted Fevers." M. A. Blankenhorn. —p. 59.
Therapeutic Uses of Isotopes. J. H. Lawrence.—p. 65.
Practical Therapeutics: Uses of ACTH and Cortisone. R. E. Dolkart. —p. 73.

Hawaii Medical Journal, Honolulu

10:403-496 (July-Aug.) 1951

Tuberculous Bronchostenosis: Pathology and Treatment. P. W. Gebauer. —p. 423.
Hypersplenism. T. F. Fujiwara.—p. 429.
*Effect of Penicillin upon Bacteremia Following Tooth Extraction. R. J. Fanning.—p. 432.
Report of Hawaii Cancer Society Cytology Laboratory. F. C. Spencer, I. L. Tilden and W. B. Quisenberry.—p. 437.

Penicillin in Tooth Extraction.—This is a report on 70 patients who underwent tooth extraction, half of whom were given 300,000 units of penicillin in aqueous suspension intramuscularly into the deltoid 45 minutes before extraction and half of whom served as controls and did not receive penicillin. Blood was withdrawn from each patient for blood culture to ascertain bacteremia immediately before, immediately after, and five minutes after extraction. Of all the subjects, only four of the controls had positive cultures before extraction. Of the blood cultures taken from the control subjects immediately after extraction, 30 out of 35 were positive. All specimens of blood taken from the group treated with penicillin were negative for bacteria. Of the 35 control subjects, 14 showed a positive bacteremia in the cultures of the blood taken five minutes after extraction. In the penicillin group, all cultures were still negative. The author stresses that only one or two teeth should be removed at one time; full mouth extractions are to be condemned. Any manipulative procedure of gums or teeth should be especially avoided in patients with rheumatic heart disease. All patients should receive 300,000 units of penicillin 45 minutes prior to tooth extraction. This is particularly important in patients known to have rheumatic heart disease.

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Journal of Bacteriology, Baltimore

62:1-136 (July) 1951. Partial Index

Inhibition of Two Antibacterial Basic Proteins by Nucleic Acids. W. L. Bloom, M. G. Winters and D. W. Watson.—p. 7.
Use of Potassium Cyanide in Lactobacillus Leichmannii Assay for Vitamin B12. M. H. Soars and D. Hendlin.—p. 15.
Growth Comparisons of Streptomycin-Sensitive and Streptomycin-Resistant Micrococcus Pyogenes Var. Aureus. A. R. English and E. McCoy.—p. 19.
Effects of Metabolites upon Interactions Between Variants in Mixed Brucella Abortus Populations. W. Braun, R. J. Goodlow, M. Kraft and others.—p. 45.
Enzymology of Tubercle Bacilli and Other Mycobacteria. C. A. Owen Jr., A. G. Karlson and E. A. Zeller.—p. 53.
Sulfur Metabolism in Escherichia Coli: II. Competitive Utilization of Labeled and Nonlabeled Sulfur Compounds. D. B. Cowie, E. T. Bolton and M. K. Sands.—p. 63.
Studies on Factors Affecting Heat Resistance of Spores of Clostridium Botulinum. H. Sugiyama.—p. 81.
Alanine Synthesis and Carbohydrate Oxidation by Smooth Brucella Abortus. R. A. Altenbern and R. D. Housewright.—p. 97.

Journal of Gerontology, St. Louis

6:213-326 (July) 1951

Renal Extraction of *p*-Aminohippurate in the Aged Individual. J. H. Miller, R. K. McDonald and N. W. Shock.—p. 213.
Studies in Experimental Atherosclerosis: III. Anatomic Alterations Induced by Intravascular Injection of Cholesterol Sols into Animals. O. J. Pollak and B. Wadler.—p. 217.
Antibody Response in Old Age. L. O. Brenner, S. O. Waife and M. G. Wohl.—p. 229.
Suicide and Attempted Suicide Among Old People. E. Kiorboe.—p. 233.
Inter-Regional Migration of the Aged in the United States. H. J. Friedsam.—p. 237.
Professors in Retirement. E. H. Moore.—p. 243.
Steroid Hormones and Aging: Review. J. E. Kirk.—p. 253.
Is Compulsory Retirement Age Ever Justified? G. E. Johnson.—p. 263.

Journal of Pediatrics, St. Louis

39:133-266 (Aug.) 1951

*Theca-Cell Tumor of Ovary in Child One Year of Age: With Review of Literature. V. H. Gordon and H. N. Marvin.—p. 133.
Treatment of Acute Poliomyelitis. P. M. Stimson.—p. 144.
Terramycin Therapy for Meningitis: Report of 14 Recoveries Without Other Medication. A. L. Hoyne and E. R. Riff.—p. 151.
*Evaluation of Treatment of Primary Atypical Pneumonia with Aureomycin, Chloromycetin, and Terramycin. F. B. Graves and W. O. Ball.—p. 155.
Paroxysmal Tachycardia: Report of Two Cases in Infants Under One Month of Age. E. P. Scott.—p. 168.
Exchange Transfusion for Fetal Erythroblastosis. H. W. Kaessler and J. J. Ledgard.—p. 174.
Fragility of Red Blood Cells from Newborn Infants and Children with Cyanotic Congenital Heart Disease. F. H. Adams and S. C. Cunningham.—p. 180.
*Icterus Precox: Further Studies on Its Frequency, Etiology, Prognosis and Blood Chemistry of Cord Blood. I. Halbrecht.—p. 185.
Purulent and Serous Subdural Effusions in Course of Purulent Meningitis. G. G. Arnold.—p. 191.
Preliminary Report of Use of New Plastic Intubation Tube. A. H. Andrews Jr. and H. S. Traisman.—p. 197.
Methods of Securing Uniformity in Hospital Statistics on Premature Infants in New York City. H. M. Wallace, R. Mindlin, A. Lenz and H. Rich.—p. 200.
Dental Health Service as Function of Preventive Pediatric Care. W. C. Price, P. A. Sciullo and V. Stilley.—p. 206.

Theca Cell Tumor of Ovary.—The occurrence of a theca cell tumor of the ovary is reported in a female child 1 year old. There was a history of white vaginal discharge occurring shortly before discovery of the tumor, and, subsequently, of vaginal bleeding. Examination revealed a slightly enlarged uterus and in the lower abdomen an approximately 3 by 3 cm., freely movable, smooth, hard, and nontender tumor mass. Breasts were enlarged to about the size of those of a girl of 12, and pubic hair was present. The labia majora and minora were definitely enlarged, and there was redundancy of the hymen. The 17-ketosteroid determination revealed 0.05 mg. per 24 hours. The urine collected over a 24 hour period contained the equivalent of 230 I. U. of estrone, an amount well within the range of the normal, adult, premenopausal female. Laparotomy was performed, and a tumor of the left ovary involving the entire organ was removed with the attached oviduct. The tumor tissue was assayed for estrogen and observed to contain the equivalent of 2 I. U. of estrogen per gram of fresh tissue. This low content of estrogen is explained on the basis that the tumor excretes the hormone as rapidly as it is formed in the tissues. Preoperative vaginal smears revealed cornified epithelial cells comparable to those of women at the midinterval of the menstrual cycle. Late postoperative vaginal smears showed regression of the vaginal epithelium to the infantile condition. The diagnosis of theca cell tumor in this case was made on microscopic examination, which revealed intracellular and extracellular lipoid droplets containing birefractive granules and large amounts of reticular fibrils. This case supports the view that an ovarian tumor can produce feminizing characteristics and can contain by far a major portion of theca cell rather than granulosa cell element. Ovarian tumors of theca cell type are apparently exceedingly rare in children of this age, since in the literature of the last 20 years, no patient this young with this type of tumor was discovered.

Antibiotic Treatment of Primary Atypical Pneumonia.—Of 143 children with primary atypical pneumonia, 58 were treated with aureomycin, 66 with chloramphenicol (chloromycetin®), and 19 with terramycin. Of the 58 treated with aureomycin, the response was excellent in 36, good in 16, and poor in 6. There were three relapses and nine patients had untoward reactions consisting of vomiting and/or diarrhea, which did not necessitate discontinuation of the drug. Excellent results were obtained in 44 of the 66 patients treated with chloramphenicol, good results in 18, and poor results in 4. There were two relapses. Mild drug reactions of gastrointestinal type were observed in five patients. Excellent results were obtained with terramycin in 11 of 19 patients, good results in 7, and poor results in 1. There were no relapses. Mild gastrointestinal irritation from terramycin occurred in only one child. Primary atypical pneumonia is a serious disease in infants. The temperature is frequently not greatly elevated and may be normal. Diarrhea with or without vomiting is present in almost all patients aged less than 6 months and in 65% of all children aged less than 1 year. The patient may suddenly collapse, with temperature of 104 F or a subnormal temperature. The percentage of excellent and good results was not significantly different in the three groups of patients, but there was definite difference in the rate of untoward reactions: in aureomycin it was 15.5%, in chloramphenicol 7.6%, and in terramycin 5.2%. This difference is of considerable importance in young children and infants, in whom gastrointestinal disturbances are already present in a high percentage. Terramycin, therefore, is felt clinically to be the drug of choice in the treatment of atypical pneumonia in infants and children.

Icterus Praecox.—The occurrence of a mild form of hemolytic disease, characterized by "icterus praecox," an especially intense icterus appearing during the first 24 hours after birth, is reported in 90 of 16,000 babies. Almost all the cases were caused by an autoimmunization of the mother through the ABO antigens of the children. Only two cases were due to an Rh incompatibility. In contrast to erythroblastosis fetalis, icterus praecox occurred frequently in firstborn babies. The blood chemistry of the cord blood of 12 babies with icterus praecox was studied and was not materially different from that in nonicteric children. The immediate and future prognosis of children with icterus praecox is favorable. In 10 patients followed up to the third year of life, no sign of mental deficiency nor of neurological symptoms was detected, as are so often seen in babies surviving icterus gravis. The occurrence of kernicterus in the second child of a family whose first child had icterus praecox makes special attention and precaution imperative in pregnancies following one in which icterus praecox was present. In three cases in which this disease was observed each time in the third child, the first babies had also showed intense icterus the first day after birth. The repeated occurrence of icterus praecox in the same family should be taken into account when considering the indication of the preventive exchange transfusion. The theories of competition of antigens, and of selective permeability of the placenta to various isoantibodies, do not satisfactorily explain the occurrence of icterus praecox in certain cases of isoimmunization of the mother against the blood group antigen of her child.

Journal of Urology, Baltimore

65:937-1162 (June) 1951. **Partial Index**

Some Homeostatic Functions of Kidney. T. Findley.—p. 937.
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Ureterosigmoidostomy: Comparative Study of Techniques. C. A. Fort and H. C. Harlin.—p. 1006.
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Infiltration Treatment of Hunner Ulcer. D. K. Rose.—p. 1021.
Alpha-Tocopherol in Treatment of Interstitial Cystitis: Preliminary Report. R. E. Van Duren and R. Mustain.—p. 1033.
Epithelial Neoplasms Arising in Diverticula of Urinary Bladder. R. N. Boylan, L. F. Greene and J. R. McDonald.—p. 1041.
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Use of Urea Solutions as Irrigating Fluids. W. S. Credle, H. Warren and S. A. Vest.—p. 1065.
Hemoglobinemia and Lower Nephron Nephrosis Following Transurethral Prostatic Surgery. (Use of New Nonhemolytic Irrigating Solution, 3 Per Cent Mannitol, as a Preventive.) W. E. Goodwin, J. F. Cason and W. W. Scott.—p. 1075.
Evaluation of Hormonal Therapy Followed by Radical Perineal Prostatectomy on Selected Cases of Advanced Prostatic Carcinoma. W. W. Scott and A. L. Parlow.—p. 1093.
Cytologic Study of Benign and Malignant Lesions of Human Prostate, Urinary Bladder and Kidney. A. E. Bothe, A. J. Dalton and F. O. Zillessen.—p. 1108.

Mental Hygiene, Albany, N. Y.

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Therapeutic Values of Group Experience in Children's Institution. J. F. Robinson.—p. 439.

Michigan State Medical Society Journal, Lansing

50:689-832 (July) 1951

Pharmacological Aspects of Allergic Disease. V. A. Drill and H. W. Hays.—p. 721.
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Importance of Physical Medicine and Rehabilitation for the Industrially Injured. G. M. Martin.—p. 730.
Problems of Mid-Pelvic Dystocia. J. L. McKelvey.—p. 736.
*Dimercaprol in Treatment of Acrodynia. T. R. Kirk.—p. 739.
Unsuspected Ruptured Interstitial Pregnancy of 18 Calendar Weeks' Development. N. J. Kohlerman and H. D. Priddle.—p. 740.
Hematoma of Vulva During Labor: Case Report. H. Kirschbaum and L. Mallin.—p. 742.
Epidemic Diarrhea of the Newborn. R. M. Kempton.—p. 743.
Doctors and Dollars: Study of Professional Incomes and Expenses. H. C. Black and A. E. Skaggs.—p. 745.

Dimercaprol in Erythredema Polyneuropathy.—The cause of erythredema polyneuropathy (acrodynia or Feer's disease) was unknown until Warkany and Hubbard suggested mercury as the etiological factor in 1948. Shortly after that Bivings and Lewis used dimercaprol (BAL) in the treatment of this disease with good results. Kirk presents the histories of three children, less than 2 years old, who had the symptoms of acrodynia. The first patient, a 21-month-old white girl, was hospitalized with a four-week history of "hive-like" rash, irritability, poor appetite, weight loss, and fever. She cried at her mother's slightest touch and drooled profusely. An urticarial rash covered cheeks, trunk, and extremities, with an abrupt change at the plantar and palmar surfaces, which were smooth, red, and dry. The gums were swollen and red. The extremities were weak and slightly wasted. In a 48-hour urine specimen 100 γ of mercury per liter were found. She was given dimercaprol intramuscularly, 0.25 gm. per kilogram of body weight, every four hours for 48 hours, and then every six hours for 24 hours, and then twice daily. On the fifth day there was abrupt improvement. This child had been playing with chemical "heat tablets," which on analysis were found to contain mercuric sulfocyanide. In the other two children 0.5 gm. of mercury bichloride had been used in the diaper rinse to counteract diaper rash. Treatment with dimercaprol was successful in both.

Military Surgeon, Washington, D. C.

109:91-174 (Aug.) 1951. **Partial Index**

United Nations Medical Service in the Korean Conflict. E. E. Hume. —p. 91.
One Concept for Providing Flexible and Economical Medical Service to Air Force. M. S. White.—p. 96.
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Carcinoma of Male Breast: Report of 15 Cases. P. J. Guthorn.—p. 110.
Glaucoma. F. M. C. Usher.—p. 114.
Plantar Warts. D. C. Campbell Jr.—p. 116.
Electrocardiographic Effects of Emetine Hydrochloride. L. J. Baer. —p. 120.
New Formula for Clinical Means of Estimating Basal Metabolic Rates. I. J. Yetwin.—p. 129.

New England Journal of Medicine, Boston

245:121-158 (July 26) 1951

*Some Secondary Effects of Sympathectomy with Particular Reference to Disturbance of Sexual Function. G. P. Whitelaw and R. H. Smithwick.—p. 121.
Utilization of Services in Medical Group Practicing Prepaid Medicine. R. E. Rothenberg and K. Pickard.—p. 130.
Marsupialization Operation for Pilonidal Sinus: Comparison with Other Surgical Methods in 359 Cases. K. B. Lawrence and W. J. Baker. —p. 134.
Oral Administration of Cortisone in Case of Erythema Nodosum. A. L. Ureles and R. B. Kalmansohn.—p. 139.
Foreign Bodies in Respiratory Tract. L. G. Richards.—p. 141.

Disturbances of Sexual Function After Sympathectomy.—The results reported were obtained through questionnaires, which were sent to 265 patients and returned by 183 (69%). In the transthoracic procedure for sympathectomy, in which the operation is extended to D_1 or D_2, to include the sympathetic denervation of the heart, there was no permanent loss of ejaculation but a disturbance of erection occurred in 57% of the cases. This was not complete and did not seriously interfere with sexual intercourse. The authors concluded that in the lumbodorsal operation all phases of sexual function can be preserved by modifying the operation and not removing any ganglion below L_1 on one side and D_{12} on the other. In the bilateral lumbar procedure there will be no interference with sexual function if the operation is not extended to include L_1 on either side. However, the first lumbar ganglion may be difficult to identify. In cases in which removal of the lumbar sympathetic chain below L_2 bilaterally will have the desired clinical effect, almost complete assurance can be given that sexual function will not be altered. On the other hand, when L_1, L_2, and L_3 are removed on both sides significant change in sexual function can be expected in at least 63% of cases. The vast majority of patients with serious cardiovascular disorders, particularly those who do not plan to have any more children, do not wish to have possible changes of sexual function considered in the decision concerning exactly what ganglions should be removed. The authors believe that it is wise, however, to apprise the patient of the possibilities in this regard before operation and allow him to make the decision. The anatomic pathways and physiologic mechanisms involved in erection and ejaculation before operation are outlined, and an attempt is made to clarify the manner in which these functions are interfered with after various types of sympathectomy. The authors feel that the high incidence of favorable evaluation of the various operative procedures by the patients themselves suggests that many of the secondary effects following sympathectomy will be well tolerated.

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New York State Journal of Medicine, New York

51:1663-1758 (July 15) 1951

*Cardiovascular Examination of 200 Practicing Physicians Over the Age of 40. A. M. Master, K. Chesky and L. Pordy.—p. 1713.
Precordial Leads in Electrocardiographic Diagnosis of Myocardial Damage. G. H. Reifenstein.—p. 1718.
Role of Water and Salt in Development of Heart Failure. G. E. Miller.—p. 1725.
Mode of Action and Clinical Uses of Antithyroid Compounds. T. H. McGavack.—p. 1729.
Clinical Findings with Dock Ballistocardiograph. H. Mandelbaum and R. A. Mandelbaum.—p. 1734.
Further Observations on Response of Erythroblastic, Megaloblastic, and Radiation Anemias to Streptomyces-Derived "Animal Protein Factor" and Antibiotics. R. D. Barnard, J. M. Caracappa, M. Schwartz and others.—p. 1739.

Cardiovascular Examination of Physicians Over Forty.—Cardiovascular examination was performed on 200 unselected practicing physicians ranging in age from 40 to 81. The investigation included a history, a physical examination, a 12-lead resting electrocaridogram, cardiac fluoroscopy or x-ray examination of the chest, a "2-step" exercise electrocardiogram, a resting and exercise ballistocardiogram, and a Flicker photometer test, when available. Of 120 physicians who presented no symptoms, 71 were entirely normal. The remainder showed abnormal findings on examination. Eighty of the physicians did have complaints. Twenty-nine had cardiac enlargement, as shown by x-ray and/or cardiac fluoroscopy. Abnormal resting electrocardiograms were obtained in 30 physicians. Cardiac function tests revealed the following alterations: There were 41 abnormal "2-step" exercise electrocardiograms and 85 abnormal ballistocardiograms, either at rest or after exercise. There were 24 abnormal Flicker tests. Seventeen physicians had had a previous coronary artery occlusion or myocardial infarction; this was established either by a reliable history or by electrocardiographic changes. Twenty patients had angina pectoris due to coronary artery disease, without myocardial infarction. Asymptomatic occult coronary insufficiency, probably due to coronary artery sclerosis, was found in 22 physicians. Arteriosclerotic heart disease was diagnosed in 26 cases; this, too, probably represented coronary sclerosis. Rheumatic heart disease was discovered in two cases, hypertensive heart disease in four, essential hypertension in three, and neurocirculatory asthenia in one. Of the 200 physicians, 94 had definite heart disease, of which coronary artery disease constituted 90% (85 cases). Thirty-four were considered to have "potential" heart disease, because of some abnormal cardiac function test. One physician died suddenly. The high frequency of coronary insufficiency among physicians is probably related to their busy, tense life, combined perhaps with their obesity and excessive use of tobacco.

Ohio State Medical Journal, Columbus

47:697-800 (Aug.) 1951

Sarcoidosis: Report of Case Simulating Gall Bladder Disease Treated with Aureomycin. W. H. Mast.—p. 713.
General Practitioner and Cross Eyed Child. G. T. Stine.—p. 717.
Ambulatory Penicillin Therapy of Syphilis in Public Health Clinic—Report on 402 Patients Treated in 1949 and 1950. A. L. Weiner, C. A. Wilzbach and C. E. Ludlow.—p. 720.
The Physician's Role in Civil Defense. J. D. Porterfield.—p. 725.
Congenital Dextrocardia with Situs Inversus Complicated by Acute Myocardial Infarction: Report of Case. J. M. Wilson and W. E. Chaney.—p. 729.
Carcinoma of Uterine Cervical Stump: Its Incidence and Prophylaxis (Analysis of 252 Cases of Cervical Carcinoma). M. H. Lambright Jr. and K. M. Clement.—p. 733.
Congenital Cleft Lip. B. C. Martin and J. C. Trabue.—p. 736.
Another Heterotopic Pregnancy Case is Recalled. D. B. Gilliam.—p. 737.

Oklahoma State Medical Assn. J., Oklahoma City

44:253-300 (July) 1951

The Army Medical Situation. P. I. Robinson.—p. 256.
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44:301-340 (Aug.) 1951

Younger Diabetic and Control of His Disease with Help of Hospital Teaching Clinic. E. P. Joslin.—p. 304.
Diagnosis and Congenital Heart Disease. J. F. Tagge.—p. 309.
Fractional Glandular Disturbances. J. L. Duer.—p. 313.
Non-Psychogenic Neurasthenia. R. W. Goen.—p. 316.

Pediatrics, Springfield, Ill.

8:1-162 (July) 1951

Studies on Prevention of Mumps. G. Henle and W. Henle.—p. 1.
*Pulmonary Hyaline Membranes in Newborn Infants: Statistical, Morphologic and Experimental Study of Their Nature, Occurrence and Significance. W. Blystad, B. H. Landing and C. A. Smith.—p. 5.
*Pituitary Adrenocorticotropic Hormone (ACTH) and 11-Dehydro-17 Hydroxy Corticosterone (Cortisone) Therapy in Leukemias and Lymphomas of Children. C. E. Snelling, W. L. Donohue, B. Laski and S. H. Jackson.—p. 22.
Effects of ACTH and Cortisone on Leukemia in Childhood. I. Schulman, J. T. Lanman, O. E. Laxdal and L. E. Holt Jr.—p. 34.
Effects of Limited Hearing on Development of Speech in Children Under Three Years of Age. H. C. Huizing and D. Pollack.—p. 53.
Aureomycin in Treatment of Fibrocystic Disease of Pancreas: Clinical and Metabolic Studies. D. Stowens.—p. 60.
Development of Neonatal Electrolyte Homeostasis. B. D. Graham, J. L. Wilson, M. U. Tsao and others.—p. 68.
Indwelling Polyethylene Nasogastric Tube for Feeding Premature Infants. S. Royce, C. Tepper, W. Watson and R. Day.—p. 79.
Source of Error in Test for Stool Trypsin. P. C. Gaffney.—p. 82.
Encephalitis Complicating Attenuated Rubeola: Report of Case. J. L. Rosenzweig and W. G. Klugh.—p. 85.
Juvenile Pernicious Anemia. E. H. Reisner Jr., J. A. Wolff, R. J. McKay Jr. and E. F. Doyle.—p. 88.
Relative Effectiveness of Vitamins A and D in Oil and in Water. R. C. Ellingson, F. G. McDonald, O. N. Massengale and W. M. Cox Jr.—p. 107.
*Modification of Technic of Treating Erythroblastosis Fetalis by Exchange Transfusion. A. S. Wiener and I. B. Wexler.—p. 117.

Pulmonary Hyaline Membranes in Newborn Infants.—Analysis of material from 497 consecutive necropsies performed on newborn infants who died in the neonatal period, together with analysis of the infants' histories, showed that hyaline (asphyxial) membranes occurred most commonly in the lungs of premature infants and of more mature infants with a history of a complication of pregnancy, labor, or delivery capable of causing fetal anoxia. These membranes were not seen in stillborn infants nor in infants living less than one hour. They appear to cause atelectasis by blocking the mouth of alveoli and to be a major cause of death in the neonatal period. Studies indicated that they are not formed of vernix or meconium but of the concentrated protein of amniotic fluid. A rise of the squamous cell content of amniotic fluid during the third trimester of pregnancy has been demonstrated; this may explain the difference in microscopic appearance between hyaline membranes formed of amniotic fluid that is aspirated before the rise in squamous cells takes place and those containing squamous cells that are seen if the fluid is aspirated after this increase. The hyaline membranes were demonstrated to be independent of pulmonary hemorrhage, edema, or inflammation and not to be formed of degenerated airway epithelium. Pulmonary membranes similar to those seen in newborn human infants were produced experimentally by repeated intratracheal injection of small amounts of amniotic fluid into the excised respiratory tracts of guinea pigs while the lungs were alternately expanded and contracted for one hour. The authors' results do not permit a definite explanation of the predominance of pulmonary hyaline membranes in premature infants dying in the neonatal period. It is entirely reasonable that factors producing fetal anoxia are commoner in the pregnancy, labor, or delivery of the mothers of such infants than in those of full-term infants. It also seems probable that premature infants are less able to dispose of aspirated amniotic sac contents by absorption and through the airway than are full-term infants.

Corticotropin and Cortisone Therapy in Leukemia and Lymphosarcoma.—Thirteen children, between the ages of 2 and 14 years, with leukemia were treated with corticotropin (ACTH). Five of these had been previously treated with one of the folic acid antagonists, 4-aminopteroylglutamic acid ("aminopterin"). Four additional children, three with leukemia and one with lymphosarcoma, were treated with cortisone. Of the eight patients who received corticotropin prior to any other form of specific treatment, six had a complete remission, which lasted from 3 to 13 weeks before relapse occurred. Of the five patients who received the folic acid antagonist prior to treatment with corticotropin, one had a complete remission, which lasted 10 weeks. Another had a partial hematological response, but generalized sepsis developed during treatment with corticotropin, and the patient died. Two had a moderate or slight remission followed by a quick relapse, and the fifth patient showed no response.

Five of the children who relapsed had been retreated with corticotropin, and only one of these had a favorable response. The four other patients showed no response to retreatment with corticotropin, and they were also refractory to other types of therapy, such as cortisone and 4-aminopteroylglutamic acid. The duration of treatment in the patients with an initial good response varied from 17 to 33 days, this being the time required to produce a normal marrow. The total amount of corticotropin given varied from 680 mg. to 2,300 mg. Of the three patients with leukemia who received cortisone as their primary treatment, one had a complete remission, while the two others showed no response. The successfully treated child received 2,000 mg. over a period of 15 days. His remission lasted four weeks and was followed by a relapse, which was refractory to treatment with both corticotropin and 4-aminopteroylglutamic acid. The patient with lymphosarcoma responded extremely well to cortisone, with much shrinkage of the tumor masses and disappearance of symptoms, but two weeks after cessation of treatment there was an exacerbation of the disease, which was quickly followed by death. Chemical studies indicated that in those patients in which a remission was produced, coincident with the remission there was a mass destruction of leukemic tissue. Great variations were noted from patient to patient and also in the same patient in regard to the cytological, physiological, and biochemical effects of the hormones. Although corticotropin and cortisone are unsatisfactory for permanent treatment of the leukemias and lymphomas, they offer invaluable tools for the investigator in the study of these diseases.

Exchange Transfusion in Erythroblastosis Fetalis.—The purpose of exchange transfusion in erythroblastosis fetalis is to disrupt the combination of Rh agglutinogen and Rh antibody that is present in the body of the erythroblastotic infant. Twenty-two erythroblastotic infants were treated by a simplified method of exchange transfusion, in which the patient is bled and simultaneously transfused with compatible packed red blood cells. The percentage replacement of red blood cells in specific instances must be calculated by taking into account the hematocrits of the patient's and the donor's blood. A table is presented which gives the final hematocrit and percentage of inagglutinable red blood cells in the patient's body at the termination of the exchange transfusion, in relation to the patient's initial hematocrit and the amount of blood exchanged. An exchange transfusion with 100 to 150 cc. of packed cells appeared to be adequate, regardless of the severity of the anemia. Of 106 erythroblastotic infants treated by various methods of exchange transfusions 38 were given 500 cc. of whole citrated blood, 48 received 1,000 cc. of whole citrated blood, and 20 were given 120 cc. of packed cells. Death due to erythroblastosis occurred in 9 of the 38 patients (23.7%), in 7 of the 48 patients (14.6%), and in 2 of the 20 patients (10%). While this progressive drop in mortality rate may be accidental, there is no doubt that exchange transfusion with packed cells is a simplified procedure in which the same volume is transfused as withdrawn, having the advantage of minimizing circulatory strain. This procedure takes only 25 to 30 minutes, in contrast to exchange transfusion with 500 to 1,000 cc. of whole blood, requiring 60 to 90 minutes. With this method, neither large amounts of adult plasma nor potentially toxic doses of citrate and calcium are introduced into the infant's body. Two cases are described that have unusual serologic and clinical features and illustrate the types of problems that may arise in the treatment of erythroblastotic infants.

Pennsylvania Medical Journal, Harrisburg

54:705-832 (Aug.) 1951

Immediate Treatment of Hand Injuries. S. L. Koch.—p. 721.
Aspects of Nutritional Management of the Seriously Ill. A. M. Lupton. —p. 728.
Recent Advances in Immunology. P. B. Kreitz.—p. 731.
Medical Treatment of Pulmonary Tuberculosis. J. S. Packard.—p. 733.

Psychoanalytic Review, Albany, N. Y.

38:205-304 (July) 1951

Transference Function: Study of Normal and Pathological Transference. J. A. M. Meerloo and M. L. Coleman.—p. 205.
In Pursuit of Happiness. L. Eidelberg.—p. 222.
Psychoanalytic Study of a Case of Murder. B. Karpman.—p. 245. —p. 271.
Unconscious Relationship Between Hypnosis and Death. J. M. Schneck.

Review of Gastroenterology, New York

18:465-552 (July) 1951

Prolapse of Gastric Mucosa Through Pylorus with Concomitant Gastrointestinal Pathology. E. M. Rappaport, E. O. Rappaport and A. Stanton.—p. 473.
Melanosis Coli. L. L. Perkel and L. Troast.—p. 488.
*Sympathetic Block for Preservation of Strangulated Intestines. H. Nathan. —p. 493.
Nutritional Diseases of Mouth and Their Differential Diagnosis. H. D. Fein.—p. 500.
Psychophysiologic Studies in a Female Patient with Large Gastric Fistula. A. Winkelstein, S. G. Margolin, M. R. Kaufman and others. —p. 507.
Biochemical Approach to Treatment of Chronic Progressive Diseases of Nutritional Origin: Process Therapy Theory. E. Tuttle.—p. 511.
Treatment of Hepatitis. B. O. C. Pribram and R. Upham.—p. 521.
Evaluation of Antacid Activity of "Special" Aluminum Hydroxide Mixture. A. X. Rossen, A. Stanton and S. S. Feuerstein.—p. 535.
Incarcerated Appendix in Strangulated Femoral Hernia: Review of Literature and Case Report. D. Kose.—p. 540.

Sympathetic Block for Preservation of Strangulated Intestines.—The diagnosis of intestinal strangulation may be difficult, but often even more difficult is the question whether the intestines are still viable or not and whether resection should be done. Three pathological problems are involved in strangulation: the closed loop, the mesenterial vascular occlusion, and the proximal intestinal obstruction. The closure of the loop caused by a band, a hernial sac, or a volvulus and the removal of the intestinal obstruction can be accomplished by mechanical means. The vascular damage is a combined mechanical and dynamic process of occlusion and vascular reflex spasm. Blocking of the sympathetic nerve, by injection of procaine hydrochloride into the celiac ganglion or into the edge of the mesentery and along the vessels, eliminates the spasm. Change in color, pulsation, and peristalsis will indicate response to the injection. If improvement is seen, conservative measures are justified. If there is no response the amount of resection may still be reduced, if the vascular condition in the surrounding area improves. Five cases of successful use of this method are described. A 1% solution of procaine hydrochloride was usually employed.

South Dakota J. Med. & Pharmacy, Sioux Falls

4:151-188 (July) 1951

Carcinoma of Prostate Gland. W. J. Baker.—p. 151.
Ocular Mucous Membrane of Erythema Multiforme Exudativum. G. H. Spurbeck.—p. 157.
Chemotherapy of Cancer. R. P. Hohf.—p. 160.
Head Injuries. R. M. Klemme.—p. 165.

Southern Medical Journal, Birmingham, Ala.

44:673-768 (Aug.) 1951

*Afferent Innervation of Peripheral Blood Vessels Through Sympathetic Trunks: Its Clinical Implications. A. Kuntz.—p. 673.
Differential Diagnosis of Precancerous and Cancerous Lesions of Mouth. A. L. Welsh.—p. 679.
Recent Therapeutic Advances in Rickettsial and Viral Infections. R. J. Blattner.—p. 685.
Diagnosis and Treatment of Early Malignant Disease of Larynx. E. N. Broyles.—p. 692.
Management of Retinal Detachment. J. W. McKinney.—p. 693.
Abdominal Surgical Problems Complicating Pregnancy. S. B. Lovelady, C. Liggett and R. V. Jones.—p. 696.
Certain Public Health Aspects of Heart Disease. L. M. Blackford. —p. 701.
Spontaneous Thrombosis of Internal Carotid Artery. H. S. Swanson. —p. 705.
Role of Hypersensitivity in Rheumatic Fever. N. K. Weaver.—p. 711.
Roentgen Diagnosis of Neoplastic Disease of Lungs. L. R. Sante.—p. 717.
Surgery in Portal Hypertension. L. V. Mulligan.—p. 724.
Sarcoma of Breast. F. M. Massie and J. T. McClellan.—p. 729.
Recent Advances in Colon and Rectal Surgery. G. W. Ault.—p. 737.
Diet in the Management of Peptic Ulcer. J. W. Larimore.—p. 742.
Management of Urologic Accidents in General and Gynecologic Surgery. H. E. Carlson.—p. 744.
Survey of Ragweed Pollination in Maryland for 1949. J. Sherman and L. N. Gay.—p. 749.
Meniere's Symptom Complex: Its Importance Today. G. B. Trible. —p. 754.

Afferent Innervation of Peripheral Blood Vessels.—Kuntz made studies to obtain additional data on the function of the afferent spinal nerve fibers that enter the extremities through the communicating rami after traversing the sympathetic trunk, both

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in animals and in man, and on their distribution in the extremities. The data on the functional nature of these fibers and their distribution were obtained in part from stimulation experiments carried out on cats and in part from a patient in whom lumbar sympathetic trunk extirpation was carried out with local anesthesia. The author says that the occurrence in the extremities of afferent spinal nerve fibers that traverse the sympathetic trunk and communicating rami has been demonstrated in the cat by the use of both anatomic and physiological experimental techniques. Histological studies of osmic acid preparations of gray communicating rami, or sympathetic roots, which join the brachial and the lumbosacral plexuses in man, in comparison with the corresponding rami in the cat, indicate that in man, as in the cat, some afferent spinal nerve fibers reach the extremities through the sympathetic trunk. The assumption that some of the fibers in question conduct pain impulses is supported by both experimental and clinical data. They are not generally distributed to the skin and the muscles of the extremity, but appear to be distributed chiefly in relation to blood vessels. Such fibers play a significant role in the mediation of deep pain in the extremities, particularly pain of vascular origin. The relief of pain in extremities following sympathectomy in some patients appears to be due to interruption of pain-conducting dorsal root fibers that traverse the sympathetic trunk.

Southwestern Medicine, El Paso, Texas

32:253-288 (Aug.) 1951

Resection in Treatment of Pulmonary Tuberculosis. J. W. Gale, H. Dickle and A. R. Curreri.—p. 266.
Primary Lung Carcinoma. D. von Briesen.—p. 270.
Ovarian Tumors. W. R. Cooke.—p. 273.

32:289-324 (Sept.) 1951

Public Relations Program Suggestions for New Mexico Medical Society. E. A. Edwards.—p. 299.
Treatment of Diabetes Mellitus Today. R. G. Greenlee.—p. 302.
Variability of Insulin Response. T. M. Feinblatt and E. A. Ferguson Jr. —p. 308.
Oil Soluble Caudal Anaesthesia for Ano-Rectal Surgery. H. Eidinoff. —p. 310.

Surgery, Gynecology and Obstetrics, Chicago

93:129-256 (Aug.) 1951

*Absolute Curability of Cancer of Breast. W. W. Park and J. C. Lees. —p. 129.
Late Sequelae of Inferior Vena Cava Ligation. P. C. Shea Jr. and R. L. Robertson.—p. 153.
Observations on Water Diuresis and on Ureteral Peristalsis in Infant with Exstrophy of Bladder. G. Falk and J. A. Benjamin.—p. 159.
Technique for Aortic Embolectomy. J. L. Madden.—p. 167.
Split T Tube and Retaining Apparatus for Indwelling T Tubes in Repair of Strictures of Bile Duct. F. H. Lahey.—p. 173.
*New Method of Treatment of Trichomonas Vaginalis Vaginitis. L. V. McVay Jr., L. Evans and D. H. Sprunt.—p. 177.
Cutaneous Histamine Reaction as Test of Circulatory Efficiency of Tubed Pedicles and Flaps. H. Conway, R. B. Stark and D. Joslin. —p. 185.
Electrophrenic Respiration: VII. Motor Point of Phrenic Nerve in Relation to External Stimulation. S. J. Sarnoff, L. C. Sarnoff and J. L. Whittenberger.—p. 190.
Intrathoracic Goiter: Surgical Management and Roentgenographic Appearance. R. D. O'Malley, W. B. Parsons and R. P. Ball.—p. 197.
Surgical Significance of Small Bowel Tumors. E. L. Strohl, W. G. Diffenbaugh and F. E. Sarver.—p. 209.
Total Spinal Anesthesia in Surgical Management of Congenital Arteriovenous Aneurysm. H. S. Swanson, W. H. Galvin and E. F. Fincher. —p. 215.
Postemetic Rupture of Esophagus. P. C. Samson.—p. 221.
Radioiodine Uptake by Fetal Mouse Thyroid and Resultant Effects in Later Life. H. Speert, E. H. Quimby and S. C. Werner.—p. 230.
Hemoglobin Spreading Test During Pregnancy. P. Ducommun, P. S. Timiras and F. Dordoni.—p. 243.

Rate of Curability of Breast Cancer.—In this report an attempt is made to assess the absolute curability of breast cancer. The treatment of cancer of the breast is based on the hypothesis that early treatment increases the cure rate. The only direct evidence that treatment is effective will be the finding that delay in treatment does indeed diminish the cure rate. Examination of the literature showed that this direct evidence has not been found. This failure is due partly to the variability of estimates of the date of onset of symptoms, but in the main it is due to the great variability in growth rates between different cancers of the breast. It has been explained how variability in growth rate between different cancers combined with the use of a survival rate as a measure of cure can create an apparent cure rate that is partly or wholly fictitious. It has been shown that the apparent curability of cancer of the breast can be explained entirely in terms of the variability of growth rate. The results of this examination of true curability of cancer of the breast can be summarized as follows: 1. It has not been proved that the survival rate of cancer of the breast, using the five year survival rate as an index, is in any way affected by treatment. 2. The evidence strongly suggests that treatment is completely ineffective in reducing the incidence of death from metastatic spread. 3. If treatment is in any way effective, the effectiveness cannot be greater than that required to increase the over-all five year survival rate by 5 to 10%.

New Treatment of Trichomonas Vaginalis Vaginitis.—To establish the effectiveness of the local application of aureomycin, the vagina of six nonpregnant patients having symptomatic Trichomonas vaginalis vaginitis was insufflated with 2 gm. of powdered talc on two consecutive days, and insufflation was repeated on the fourth and sixth days. Talc was employed because it is an inert substance. At the end of this period, the vaginal secretions were negative for T. vaginalis. However, within eight days all had again become positive. These six patients were retreated exactly as before, except that each insufflation consisted of 500 mg. of aureomycin in 2 gm. of powdered talc. These patients were examined every two weeks for three months after treatment, and all remained asymptomatic and free of parasites. Therefore, it was decided to expand this investigation. Ninety-five patients with T. vaginalis vaginitis were treated by local application of aureomycin in the lower genital tract. Of these patients, 32 were pregnant. A total of 86 of these patients met the criteria of cure of Trichomonas vaginitis. No significant toxic reactions to aureomycin were observed in these patients, and thus it appears that aureomycin is an effective therapeutic agent in vaginitis caused by T. vaginalis.

Virginia Medical Monthly, Richmond

78:393-454 (Aug.) 1951

Lower Nephron Nephrosis. M. M. Pinckney.—p. 394.
Observations on Antihistamine Drugs. O. Swineford Jr.—p. 399.
Benign Lesions of Stomach. H. Nushan, B. Miller and W. A. Read. —p. 404.
Diagnosis and Treatment of Migraine Syndrome and Related Vascular Headaches. W. H. Higgins Jr.—p. 412.
Pregnancy and Tuberculosis. A. L. Kruger, R. S. Cosgrove and S. A. Cosgrove.—p. 417.
Treatment of Epilepsy with Mesantoin or Hydantal: Study of 35 Consecutive Patients with Grand Mal Seizures Treated at Virginia State Penitentiary and in Private Practice with Follow-Up of 1 to 2 Years. H. Brick.—p. 423.
Vasopressor Drugs in Spinal Anesthesia. E. P. Jones and W. E. Pembleton.—p. 430.

Wisconsin Medical Journal, Madison

50:733-840 (Aug.) 1951

Epidemic Shigella Gastroenteritis (Bacillary Dysentery) in Epidemic Area: I. Incidence, Distribution at Various Age Group Levels, Etiology and Transmission. M. Feig.—p. 755.
Coexistence of Pregnancy and Craniopharyngioma. A. W. Hilker and J. B. Miale.—p. 762.
Office Treatment of Diabetes Mellitus. M. M. Baumgartner.—p. 765.
Surgical Management of Uterine Prolapse. B. E. Urdan.—p. 770.
Study of Accuracy of Clinical Diagnosis in 108 Autopsies Revealing Active Tuberculosis. T. H. Davidson, M. Hardgrove and J. M. Lubitz. —p. 772.

World Medical Association Bulletin, New York

3:153-216 (July) 1951. **Partial Index**

The Physician in War. B. E. Moore.—p. 197.
Present Status of Aureomycin Therapy. I. J. Patton.—p. 199.
Founding of the World Medical Association. J. A. Pridham.—p. 207.
The World Medical Association and the World Health Organization. Discussion Between Two Organizations.—p. 211.

FOREIGN

Acta Medica Scandinavica, Stockholm

140:1-78 (July 7) 1951. **Partial Index**

Primary Amyloidosis. R. Thingstad.—p. 1.
*Gastric Resection in Gastric Ulcer: Reexamination of 105 Patients Treated with Partial Gastrectomy for Gastric Ulcer. S. Johnsson. —p. 12.
Remote Effects of Removal of Normal Spleen in Man. E. Ask-Upmark. —p. 25.
*Common Infections in Disseminated Sclerosis and Other Diseases of Nervous System. T. P. Störtebecker.—p. 41.

Partial Gastrectomy for Gastric Ulcer.—Of 105 patients, 68 men and 37 women with gastric ulcer who submitted to partial gastrectomy, 12 died within 1 to 16 days after the operation, a mortality rate of 11.4%. A contributory cause of the high operative mortality might have been the fact that the indications for surgical treatment were too strict, so that the patients treated by gastrectomy often had extensive adhesions or an ulcer penetrating into the pancreas. Eighty of these patients were alive at the time of follow-up examination 2 to 20 years after the operation. Personal contact was obtained with 78, and, of these, 65 (83.3%) were completely free from complaints, 8 (10.3%) were greatly improved, 2 were improved, and 1 was not improved. In two, peptic ulcer of the jejunum appeared, causing death in one patient seven years after the operation, while the other remained symptom-free for nine years after repeated resection. Anemia, with hemoglobin values of less than 80% in men and less than 70% in women, was observed in one-third of the reexamined patients, while nearly one-fourth of the patients had anemia before the operation. The 16 patients with the lowest hemoglobin values were given intensive iron medication resulting in a rise of hemoglobin and in normal values for serum iron in all except one of these patients, in whom they previously had been pathologically low. Microscopic examination of the feces showed that none of the patients had any pronounced digestive disturbances. The body weight after the operation, recorded in only 66 cases, was increased in 38, stationary in 22, and decreased in 6. Follow-up results lend additional support to the principles previously advanced by the author for the treatment of gastric ulcer: at the first appearance of gastric ulcer, conservative treatment should be instituted, with the expectation of complete healing of the ulcer within six weeks, after which time, surgical intervention is advisable in case there should be malignancy. In cases of reappearance of the ulcer, particularly if it occurs soon after the termination of conservative treatment, or if the history of illness is long, surgical treatment is recommended in the absence of contraindications.

Common Infections in Multiple Sclerosis.—Serologic determinations of antistreptococcin, antistaphylolysin, and coli-agglutination titers were performed, the sedimentation rate was determined and differential leucocyte counts and bacteriologic throat swabs were done in 162 patients, 50 of whom had multiple sclerosis and 112 of whom had the various neurological manifestations that as a rule are the first symptoms of multiple sclerosis. Of these 112 patients, there was facial paralysis (Bell's palsy) in 50, eye muscle paresis in 16, vertigo in 16, facial and trigeminal neuralgia in 25 and optic neuritis in 5. Increased sedimentation rates, pathological differential leucocyte counts, pathological throat swabbings, and rise in antistreptococcin, antistaphylolysin and coli-agglutination titers were observed in a high percentage of the author's patients. Thus definite signs of infection were observed. Regression of the nervous symptoms coincided with an apparent subsidence of the infection. The signs of infection were observed in patients with multiple sclerosis and in those with the above-mentioned symptoms, when these were isolated neurological manifestations and also when they became part of the pathological picture in association with attacks of multiple sclerosis. This is remarkable, considering that these symptoms often appear as the first signs of multiple sclerosis. Bearing in mind the pathogenesis and clinical picture of multiple sclerosis, special emphasis has been put on the damage that might possibly be caused by bacterial toxins from a focal infection. Whether or not common infection might be an etiological factor in the pathological picture of multiple sclerosis, an infection must be considered injurious to any patient, and it consequently requires removal of the focus and antibiotic therapy.

Annals of Rheumatic Diseases, London

10:105-216 (June) 1951

Psychological Factors and Pain in Assessment of Rheumatoid Therapy. C. J. M. Clark.—p. 105.
"Experimental Error" of Therapeutic Trials in Rheumatoid Arthritis. P. D. Bedford.—p. 111.
Homologous Tissue Sensitization: Failure to Produce Joint and Kidney Lesions or Precipitins with Homologous Tissues Plus Streptococci. K. T. McKee and O. Swineford Jr.—p. 116.
Calcium Succinate with Aspirin in Treatment of Rheumatic Disease: I. Clinical Evaluation. H. H. Tillis and H. S. Connamacher.—p. 118.
Id.: II. Calcium Succinate with Aspirin as Anti-Rheumatic Agent. D. C. Crain.—p. 121.
Ulnar Deviation of Fingers. G. R. Fearnley.—p. 126.
Concomitant Involvement of Shoulder Joints by Proliferative and Degenerative Arthritis. R. H. Ramsey.—p. 137.
*Treatment of Dysreaction Diseases with Nitrogen Mustards. C. Jiménez Díaz.—p. 144.
Total and Differential Protein Levels in Blood and Cerebrospinal Fluid in Rheumatoid Arthritis. B. Lush, M. F. Crowley, E. Fletcher and J. F. Buchan.—p. 153.
*Further Investigations on Pituitary Gland Implantations in Rheumatoid Arthritis. G. Edström and S. Thune.—p. 163.
Desoxycorticosterone Acetate (DOCA) and Vitamin C in Rheumatoid Arthritis. J. M. Poal.—p. 171.
Arthritis in Rats Produced by Pleuro-Pneumonia-Like Organisms. M. W. Parkes and F. Wrigley.—p. 177.
Thymol Reaction in Rheumatoid Arthritis. K. Kalbak.—p. 182.
Variations in Thymol Reaction in Rheumatoid Arthritis Patients Under Treatment with Cortisone and ACTH. K. Kalbak.—p. 185.

Nitrogen Mustards in Dysreaction Diseases.—For many years Jiménez Díaz and his co-workers studied the diseases now generally referred to as allergic. His studies on the reversibility of bronchial asthma by modification of the "nucleus of dysreaction" were in some ways parallel to Hench's observations on the "potential reversibility" of rheumatoid arthritis, another disease in which an important role is played by hyperergic reaction. Owing to the difficulties of obtaining sufficient amounts of corticotropin (ACTH) and cortisone, Jiménez Díaz began to experiment with nitrogen mustards in the treatment of allergic disease, because nitrogen mustard (NH3) had been shown to have a range of effects somewhat similar to that of corticotropin and cortisone and to resemble in action the phenomena of shock and immunity. Nitrogen mustard (methyl tris-[β-chlorethyl]-amine) was used in the treatment of patients with rheumatoid arthritis, asthma, and various other disorders. In the majority of 32 cases of rheumatoid arthritis and in 13 cases of asthma, considerable improvement occurred. Other conditions in which benefit was obtained were psoriasis, scleroderma, thromboangiitis, and iritis. The author thinks that these first results may open a promising line of future research.

Pituitary Gland Implantations in Rheumatoid Arthritis.—Implantations of anterior lobes of the pituitary gland of pigs or calves have been made in about 100 cases of rheumatoid arthritis in the Arthritis Department of Lund Hospital. Fresh pituitary glands were used, as it is important that the procedure be carried out rapidly. Lately, attempts have been made to preserve the fresh hypophyses by deep freezing. Of the 100 cases, 51 were observed for nine months after treatment. Approximately half (27 cases) of this group are still without clinical symptoms or are much improved, 20 having been totally free from clinical symptoms. Eleven have had relapses, generally after about three months, and thirteen showed no clinical effect. As a rule, the older the patient, the poorer the result. Clinical effects usually occurred immediately after the operation. The increased excretion of 17-ketosteroids and uric acid usually disappeared within 24 hours; the reduction in circulating eosinophil leucocytes, which was marked after four hours, sometimes lasted two or three days. Other biochemical reactions were uncertain and less marked.

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British Journal of Dermatology, London

63:241-282 (July) 1951

Vulval Atrophy and Leukoplakia. H. J. Wallace and I. W. Whimster. —p. 241.
Investigations in Case of Urticaria Pigmentosa. J. M. Drennan and J. M. Beare.—p. 257.
Linear Psoriasis. G. Leslie.—p. 262.

Canadian Medical Association Journal, Montreal

65:95-180 (Aug.) 1951

Intra-Arterial Transfusion. A. D. McKenzie and H. S. Morton.—p. 95.
Factors Influencing Recovery in Genito-Urinary Surgery. S. A. MacDonald. —p. 99.
Role of Anaesthesiologist in Management of Intractable Pain. J. J. Bonica.—p. 103.
Psychoanalysis. N. Viner.—p. 108.
Cortisone in Treatment of Acute Rheumatic Fever. J. C. Rathbun, H. McAlpine and G. W. Manning.—p. 113.
Bronchopulmonary Candidosis (Moniliasis): Report of Three Cases. J. E. Morin, S. Leblond and P. Fiset.—p. 115.
Marisone in Treatment of Arthritis. J. Durivage.—p. 119.
*Chylothorax. V. D. Schaffner and T. A. Kirkpatrick.—p. 121.
Supra-Aortic Oesophagectomy. B. Winter and S. Spencer.—p. 123.
Paradoxical Behaviour of Erythrocyte Sedimentation Rate in Cortisone Therapy. A. W. Bagnall.—p. 125.
Surgical Procedures and Neurotic Illness. M. Straker.—p. 128.
Anaesthesia for Peroral Endoscopy. E. E. Scharfe.—p. 134.
Homosexuality as Source of Venereal Disease. B. Kanee and C. L. Hunt. —p. 138.
Para-Amino-Salicylic Acid with Streptomycin in Pulmonary Tuberculosis. N. Lewin and M. Aronovitch.—p. 140.

Chylothorax.—Although chylothorax is rare, with the ever-increasing surgical invasion of structures adjacent to the thoracic duct, injury of this duct may become more frequent. In the past, attempts at surgical correction have been universally condemned. Until recently 50% of patients died regardless of the type of management applied. Schaffner and Kirkpatrick believe that patients die from the mechanical effects of massive effusion coupled with rapid malnutrition and dehydration due to loss of fluid, food, and salt in the chyle. Constant suction drainage as a trial is reasonable, but the authors feel that the most rational major surgical correction would appear to be that suggested by Baldridge and other investigators. This consists of ligation of the duct below the site of rupture, usually just above the diaphragm. The cisterna chyli may be excised after its collecting tubules are ligated. The approach is through the right chest, regardless of the side of the effusion, because of the much easier approach to the lower end of the duct and cisterna from this side. Such surgical treatment has resulted in a marked decrease in mortality from the condition and nullifies Cushing's statement "It can't be done." The authors discuss a patient so treated in whom there has been no recurrence of fluid. Examination of the chest shows no abnormality.

Folia Haematologica, Leipzig

70:219-350 (Nos. 3 & 4) 1951. **Partial Index**

Physiology and Pathology of Plasma Cells. H. Franke and E. Heinicke. —p. 243.
Diagnosis and Differential Diagnosis of Aleukemic Lymphadenosis. H. Klingemann.—p. 267.
*Hyperplastic Late Reaction of Blood-Forming Organs to Intoxication with Dichlordiethyl-Sulfide (Yperite or Mustard Gas). W. Menzel and I. Willhoeft.—p. 278.
Periodically Relapsing Neutropenia with Monocytosis: Symptomatology of Periodic Neutropenia or Cyclic Agranulocytosis. A. Cobet and V. Schilling.—p. 286.
Toxic Impairment of Neutrophil Leukocytes. C. Riebeling.—p. 308.
Connections Between Serum Globulins and Plasma Cells in Sternal Marrow: Problem of Production of Globulin. H. Klingemann.—p. 312.
Differential Diagnosis of Aplastic Anemia. R. J. Hanschen.—p. 326.
*Toxic Impairment of Erythrocytes as Sequel of Arsenic Therapy in Human Subjects. J. Brugsch and R. Tichter.—p. 340.

Hyperplastic Reaction of Blood-Forming Organs After Mustard Gas Poisoning.—In 10 men who had done welding on containers in which war (mustard) gases, particularly yperite (dichlordiethyl sulfide), had been stored, who had been in the room in which this welding had been done, or who had filtered gasoline (applying suction by mouth) that had been stored in these barrels, the symptoms characteristic of poisoning with war gases of the mustard type developed. Burn lesions developed after latent periods of several hours. Characteristically, there were nausea and vomiting as prodromal symptoms, predominant involvement of eyes and face, of oral and laryngeal mucosa, of the hands and of the skin covering the genitalia and a poor healing tendency. Atrophy, telangiectasia, and pigmentation developed. Other symptoms were loss of weight, subacidity of the gastric juice, reduction of the vital capacity of the lung, and catarrh of the respiratory passages, which in some cases was accompanied by pulmonary edema. The cytostatic effects of the nitrogen mustards on the bone marrow have been utilized therapeutically. In the reported cases the inhibiting effect on erythropoiesis and leucopoiesis was mild in the beginning, but studies carried out over periods from 11 to 38 weeks after the intoxication revealed leucocytosis with eosinophilia and lymphocytosis. The lymphatic as well as the myeloid system was involved. Sternal punctures made in some cases revealed a decided eosinophilic reaction. Such behavior of the hematopoietic system is not without precedent. In intoxications resulting from benzene or from roentgen irradiation there occur, in addition to the aplastic reactions of the bone marrow, hyperplastic reactions of the marrow and the lymphoid tissue. Bone marrow lesions caused by toxins or rays appear weeks or months later. The wave-like course of the changes, which is found in many diseases of the hematopoietic system, is another factor that deserves attention. Erroneous diagnosis and therapy may result from these peculiarities.

Damage to Erythrocytes by Arsenic.—Before the era of liver therapy, arsenic was employed in the treatment of pernicious anemia, because it exerted a decided stimulus on hematopoiesis and produced an increase in reticulocytes. This paper is concerned with the cytotoxic effects of arsenic on the erythrocytes of the circulating blood. Toxic effects of arsenic appeared in subjects with myeloid leukemia in that additional large numbers of erythroblasts appeared in the circulating blood. Some of the erythroblasts showed decided disturbances in mitosis, so that in arsenic therapy of myeloid leukemia, especially if there is a predisposition to erythroblastosis, the possibility of inducing erythroblastosis must be taken into account. Damage to erythrocytes and disturbances in mitosis could be demonstrated also in a case of severe arsenism. A man had taken potassium arsenite (Fowler's solution), which had become highly concentrated as the result of evaporation. He showed the typical picture of arsenic cachexia: hyperkeratosis, falling out of hair, and intestinal disturbances. The anemic blood picture was characterized by a disturbance in hematopoiesis typical of arsenic-induced erythroblastosis.

Lancet, London

2:131-182 (July 28) 1951

Science and Art of Medicine. L. Whitby.—p. 131.
Saddle Embolus of Aorta. J. J. Shipman and J. F. Goodwin.—p. 133.
Saddle Embolus of Aorta. K. Fraser and A. Goldberg.—p. 136.
Pseudomonas Pyocyanea in Burns: Its Role as Pathogen, and Value of Local Polymyxin Therapy. D. M. Jackson, E. J. L. Lowbury and E. Topley.—p. 137.
Penicillin Blood Levels in Babies: Procaine Penicillin by Injection Compared with Sodium Penicillin by Mouth. J. Murray and E. M. Crawford.—p. 147.
*Value of Hypotensive Drugs in Minimising Blood-Loss in Thoracic Surgery. I. Lewis.—p. 150.
Multiple-Puncture Tuberculin Test. F. Heaf.—p. 151.
Tuberculous Peritonitis Treated with Streptomycin. H. W. Salmon. —p. 153.
*Anorectal Syndrome and Other Mild Side-Effects of Terramycin. R. R. Willcox.—p. 154.

Hypotensive Drugs in Thoracic Surgery.—Lewis used the hypotensive drugs pentamethonium and hexamethonium bromides and iodides combined with postural control to reduce hemorrhage in 80 major thoracic operations, 3 pneumonectomies, 15 lobectomies, 42 thoracoplasties, and 20 pneumoplasties. In 74, a systolic blood pressure level of about 60 mm. of mercury or less was maintained. Comparison of the present series with similar cases in which the hypotensive technique was not used revealed that this technique not only minimizes blood loss, thus diminishing the necessity for extensive blood transfusion, but also shortens the operation by providing a clearer field and reducing time required for hemostasis. Maintenance of blood pressure is no longer a major problem of thoracic surgery when this technique is used. Shock seemed to be much less, possibly owing to

the reduced blood loss and tissue fluid loss. Lowered cellular metabolism or diminution in nervous reflex irritability may explain why a smaller amount of anesthetic is required. This form of control of the circulation seems to be particularly suitable in thoracic surgery, because the diminution of respiratory movements reduces the venous return to the heart and aids the maintenance of hypotension. Furthermore, the position of the patient that gives the best hypotensive effect is only a modification of the position in common use in thoracic surgery.

Side-Effects of Terramycin.—Although the incidence of toxic side-effects from the orally administered antibiotics is relatively low, in some patients gastrointestinal symptoms develop. Willcox reports side-effects observed in 74 patients who were treated with terramycin. Thirty-five patients with gonorrhea were treated with 2 gm. of terramycin, given either as a single dose or in two doses of 1 gm. every six hours or as one 250 mg. capsule four times daily for two days. In this series the side-effects were minimal; one patient had diarrhea, one had heartburn, and two had anorectal soreness. Thirty-eight patients received total doses of from 2.25 to 19.25 gm. over periods of from 2 to 14 days, most of them receiving 5 to 9 gm. in from five to seven days. Thirteen of these 38 patients had 22 side-effects, but these necessitated cessation of treatment in only two cases. Diarrhea was the commonest side-effect; it occurred in nine patients. Nausea occurred in four, the anorectal syndrome in five, and pyrosis, headache, drowsiness, and sore throat in one each. The anorectal syndrome appeared later than diarrhea and lasted longer. It consists of burning, soreness, and pruritus and apparently does not arise as a direct result of gastrointestinal irritation, but rather seems to be the result of the alteration in the bacterial flora in the bowel.

Maandscrift voor Kindergeneeskunde, Leyden

19:145-179 (July) 1951

*Atrophy of Bone Marrow as Cause of Syndrome of Jaksch-Hayem Luzet. G. M. H. Veeneklaas.—p. 145.
Acute Osteomyelitis. D. Vervat.—p. 154.
Administration of ACTH in Child with Severe Burns. I. van der Hal and J. W. R. Everse.—p. 157.
*Experiences with Chloromycetin (Chloramphenicol). F. T. van Gelderen. —p. 172.

Cause of Jaksch-Hayem-Luzet Syndrome.—The von Jaksch-Hayem-Luzet syndrome is beginning to be considered not as a separate entity but as a manifestation of various anemias and infections. Venneklaas, however, does not agree with Cooley that the terms von Jaksch anemia and Hayem-Luzet syndrome can be discarded. Veeneklaas feels that the cause and treatment of this syndrome deserve attention. In two patients with a severe form of this syndrome he observed atrophy of the bone marrow, which he regards as the cause of this syndrome. He reports on seven other patients with the same symptoms. Clinically all these patients presented the typical picture of the pseudoleukemia of the von Jaksch-Hayem-Luzet syndrome. The two patients described had hepatosplenomegaly, anemia, and numerous immature red and white cells in the blood, with severe aplasia of the bone marrow. In smears as well as in biopsy material of the bone marrow reticular cells were found almost exclusively. The patients had had a deficient diet and numerous infections, and both had had rickets. With a normal diet the immature cells disappeared from the blood, the liver and spleen returned to normal size within months, while at the same time the aplasia of the bone marrow improved. A normal bone marrow was found one and three-fourths years and one year, respectively, after treatment. The author concludes that the von Jaksch-Hayem-Luzet syndrome arises as a sequel of, and therefore secondary to, aplasia of the bone marrow.

Experiences with Chloramphenicol.—Van Gelderen used chloramphenicol in 12 children with paratyphoid. Treatment was usually begun with 50 mg. per kilogram of body weight. After that a daily dose of 75 to 100 mg. per kilogram was given in from four to eight divided doses until the temperature became normal, after which from half to two-thirds of the original dose was given. The temperature was normal in all cases after four days, in some as early as the first or second day. Clinical improvement was rapid, and there were no toxic symptoms or relapses. One patient who had typhoid was given an initial dose of 1.5 gm., then a daily dose of 3 gm. for four days, and then a daily dose of 2 gm. for two days. The temperature became normal after three days. When a relapse occurred after two weeks, treatment was resumed. The temperature again became normal after three days. Eighteen days after the onset of the second course of treatment the patient got up, and this time there was no relapse. The author points out that an observer who had treated 44 typhoid patients with chloramphenicol stressed that treatment should be continued for more than eight days if relapse was to be avoided. The favorable results obtained with chloramphenicol in paratyphoid and typhoid could not be duplicated in whooping cough. There was no noticeable reduction in the number of the severe fits of coughing when the 15 children treated with chloramphenicol were compared with 15 controls.

Medical Journal of Australia, Sydney

1:781-816 (June 2) 1951

*Incidence and Effects of Rh Incompatibility Between Mother and Child. L. M. Bryce, R. Jakobowicz, J. J. Graydon and K. Campbell.—p. 781.
Problem of Pelvic Pain. F. A. Maguire.—p. 792.
Medical Aspects of Peripheral Vascular Disease. K. Maddox.—p. 797.
Isolation of Virus from Encephalitis in South Australia: Preliminary Report. J. A. R. Miles, M. C. Fowler and D. W. Howes.—p 799.

Rh Incompatibility Between Mother and Child.—This paper presents the results of the serologic examination of a consecutive series of 9,533 mothers and babies in relation to Rh incompatibility. A total of 1,584 women (16.7%) were Rh negative. Of these Rh-negative women, 952 had Rh-positive babies and 8 had stillborn babies who could not be tested but were presumed to be Rh-positive, making a total of 960 (60.6%). Rh antibodies were found before, at, or after delivery in the serum of 71 of the Rh-negative women. In these 71 pregnancies 19 infants were normal. Of the 52 infants who were affected, 10 had congenital edema and were stillborn, 36 had icterus gravis, 5 had anemia, and the condition of 1 was intermediate. The incidence of prematurity was greater than in the average population and ran parallel with the severity of the erythroblastosis. The over-all fetal loss was 14, there being four neonatal deaths in addition to the 10 stillbirths. Of the four neonatal deaths two were due to erythroblastosis, one to atelectasis and erythroblastosis, and one to atelectasis. In a review of the histories of previous erythroblastotic infants in the family, the variations in severity of the disease in successive pregnancies are emphasized. This aspect should be borne in mind in evaluating any therapeutic procedure.

1:817-852 (June 9) 1951

The Academic Aspect of Medical Education. A. A. Abbie.—p. 817.
Functional Uterine Haemorrhage. A. M. Sutherland.—p. 819.
Some Observations on Pancreatic Pain. J. K. Mowat.—p. 824.
Serial Gastric Biopsy Studies in Case of Duodenal Ulcer Treated by Deep X-Ray Therapy. R. K. Doig, J. F. Funder and S. Welden. —p. 828.
Pathogenic Mycobacterium Isolated from Tap Slime. R. Webster.—p. 830.

1:853-888 (June 16) 1951

Nature of Decline in Loss of Infant and Foetal Life: Study in Western Australian Vital Statistics. J. C. Edwards.—p. 853.
Stillbirths, Neo-Natal Deaths, and Premature Births in Western Australia. D. J. R. Snow and A. T. Pearson.—p. 856.
*Neurogenic Factor in Rheumatic Inflammation. M. Kelly.—p. 859.
Diffuse Scleroderma, with Report of Case Showing Multiple Lesions. D. G. Duffy and A. Bardsley.—p. 864.
Sterno-Mastoid Tumor and Congenital Muscular Torticollis. R. D. K. Reye.—p. 867.
Some Aspects of Prevention and Treatment of Bronchiectasis. K. Hirschfeld.—p. 870.

Neurogenic Factors in Rheumatic Inflammation.—Rheumatic disorders present every gradation from a single fibrositic spot to multiple articular and fibrous lesions. The pathological process common to each individual lesion is designated by Kelly as rheumatic inflammation. Tenderness and hyperemia are the earliest manifestations of inflammation; they signify nothing but damage to the tissues. Tissues may be damaged indirectly as well as directly, and evidence suggests that the indirect or neurogenic factor is important in rheumatic inflammation. Kelly cites some observations that implicate the nervous system in the persistence and spread of rheumatic inflammation. The neurogenic factor is

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not proposed as a complete explanation of rheumatism; it is suggested rather as a means through which a combination of causative factors may act to damage the tissues. The theory is not contradicted by the discovery of the important role of hormonal factors, for there are other instances of hormonal disturbances acting on tissues through their nerve endings. The author stresses that hyperalgesia, hyperemia, and exudation of fluid may be mediated through reflex action. Nervous impulses therefore play an important part in the spread of inflammation. With local analgesia the tenderness can be resolved into two elements: (1) localized primary lesions and (2) diffuse reflex tenderness, which disappears when the primary lesion is anesthetized. Patches of reflex tenderness may be separated from the primary lesion by normal tissues. In the zone of reflex tenderness (which frequently includes joints) exudation of fluid may occur. Thus effusion into a joint may be a reflex effect. Any area of rheumatic tenderness may act as a focus for further reflex spread. Therefore, in the spread of rheumatic inflammation neurogenic factors play a predominant part.

Medicina, Buenos Aires

11:145-216 (June) 1951. **Partial Index**

Consumption of Oxygen and Respiration in Pulmonary Tuberculosis. S. R. Amuchástegui, C. Z. Martinez and O. Orias.—p. 145.
*Puncture of Lung in Induction of Pneumothorax. Experiments. A. Lanari, M. Abrantes Pinheiro and H. de Souza.—p. 168.

Puncture of Lung in Induction of Pneumothorax.—Lanari and collaborators discuss the occurrence of puncture of the lung in the induction of pneumothorax. The authors experimented on dogs, which were given only one pneumothorax injection of either 100 or 200 cc. of air. The condition of the visceral pleura was observed immediately after the injection of air. Puncture of the lung occurred in 2 of 10 dogs in which the injection of air was given with the common pneumothorax needle (Küss'). It did not occur in 10 dogs in which the injection of air was given with a Küss trocar provided with a blunt mandrin, nor in four dogs in which the injection of air was given with the common pneumothorax needle (Küss') while the pleura was visualized directly. These findings were confirmed by histological examination of the lung after pneumonectomy. The results show (1) that puncture of the lung in starting pneumothorax is possible but rare and (2) that the use of a Küss trocar or similar blunt trocar in initiating pneumothorax is advisable.

Medizinische Welt, Stuttgart

20:873-920 (July 14) 1951. **Partial Index**

The Acute Abdomen: Acute Adominal Disturbances Originating in the Stomach. G. E. Konjetzny.—p. 873.
*Further Investigations on the Problem of the Formation of Renal Calculi. E. Koch.—p. 876.
Blockage of Stellate Ganglion in Therapy of Cerebral Thrombosis and Embolism. S. M. Perry and E. W. Amyes.—p. 879.
*Diencephalon, Migraine and Related Processes. M. Kibler.—p. 881.
Ultrasonics and Production of Typhus Vaccine. W. Knapp.—p. 884.

Formation of Renal Calculi.—In the course of the experimental production of renal calculi in rats Koch arrived at the concept of an acute calculous crisis of sudden onset. The formed elements that appear in rat urine as early as 10 minutes after administration of certain substances (e. g., calcium carbonate and sulfonamides) are spherical, homogeneous, almost colorless forms with a diameter of from 5 to 20 μ and are designated as colloid bodies. If the substance is sufficiently toxic and the dose large enough, the homogeneous colloid bodies show radiating stripes. These so-called spheroliths of the second phase of the crisis have a diameter up to 40 μ. The formed elements of the third phase, the microliths, show, in addition to the radiating stripes, concentric stratification. Further enlargement leads to macroscopically detectable concrements. The same morphological elements that are found in the urine during the calculous crisis are also to be found in the kidney. The crisis begins with the excretion of colloid bodies into Bowman's capsule. The formation of calculi in human subjects apparently follows the same chain of development as in animals. The author shows further that the basis of the experimentally produced calculous crisis is an impairment of the renal blood perfusion. The colloid bodies that are excreted into Bowman's capsule develop into spheroliths and microliths. They can be demonstrated only in very fresh urine. The growth of concrements takes place in successive stages which coincide with the crises. The crises can be ascertained by examination of the urine, but this method requires further improvement. Clinical management should include (1) the determination as to whether the calculus is in a period of rest or growth; (2) foci of infection or other factors that promote crises should be removed before operation is considered; (3) drugs capable of preventing crises should be tried.

Diencephalon, Migraine, and Related Disease Processes.—According to Kibler, migraine does not necessarily imply the presence of a unilateral headache; although this is a frequent symptom. It may be absent, may come after other symptoms, or may be very mild. Migraine is a diencephalic disorder that may be manifested in various parts of the sympathetic nervous system. Disorders as distinct as asthma, cardiac infarct, gastric ulcer, gangrene of the extremities, and angina pectoris may be considered as a unit, because they involve disturbances in the sympathetic nervous system, which in turn derive from diencephalic disturbances. Like migraine, these other disturbances can be treated from several angles. They can be influenced by way of the brain by various types of psychotherapy, by way of the diencephalon through sedatives, by way of the sympathetic system by means of certain drugs and by the interruption of the ganglionic pathways, and, finally, by way of the functioning organ (e. g., stomach, heart). Although theoretically all these approaches are possible, in the individual case the disturbance may be so great at one point in the chain that treatment must begin at that point. It is of interest that with "symptomatic" treatment of these disorders the effect is not necessarily limited to the eradication of this symptom, since the symptom supported a chain of pathological processes. Thus, when hyperacidity is counteracted, this may reduce the tendency not only to peptic ulcer but also to migraine, and improvement in constipation may have a favorable effect on peptic ulcer, angina pectoris, and migraine.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

95:1957-2028 (July 7) 1951. **Partial Index**

Primary Stenosis of Lumbar Vertebral Canal in Adults. H. Verbiest.—p. 1965.
New Method to Determine by Means of Heparin the Function of Thrombocytes in Various Forms of Hemorrhagic Diathesis. S. van Creveld and M. M. P. Paulssen.—p. 1971.
Urethral Stones and Possibility of Spontaneous Elimination of Bladder Stones in Urine. J. B. Mullers.—p. 1983.
*Atypical Tuberculosis with Reaction of Lymphoid Apparatus. H. Deenstra.—p. 1993.
*Greatly Retarded Delivery of Twins: A Record? J. C. P. J. Vorster.—p. 1999.

Atypical Tuberculosis with Reaction of Lymphoid Apparatus.—The histories of four patients show that tubercle bacilli may cause syndromes that can hardly be differentiated from diseases causing enlargement of the lymphoid apparatus. Acute tuberculous sepsis may closely resemble acute leukemia. In peritoneal or other forms of tuberculosis, fever, together with enlargement of the lymph nodes and of liver and spleen, leukopenia with lymphopenia, anemia, and negative reactions to tuberculin may simulate Hodgkin's disease or reticulosis. In the cases in which fever and blood changes are absent, it may be difficult to differentiate the tuberculous process from Besnier-Boeck's disease.

Retarded Delivery of Twins.—The mother of the twins whose delivery is described in this paper was a primipara, aged 26. The first of the twins, a boy, weighing about 6 lb. 2,721.55 gm.) was born after 16 hours of labor. Midwife and mother both asserted that after the delivery of the first twin labor pains ceased completely. The physician was informed of this, and he found that the second twin was in cephalic presentation and had normal heart sounds. The mother had normal temperature and pulse. An injection of 0.5 cc. of pituitrin failed to stimulate labor pains,

but mother and child continued to do well. Finally, on the fourth day, labor pains returned and the second child, a 6 lb. girl, was born 103½ hours after her twin brother. No complications developed during the puerperal period. The author believes that this prolongation of a twin delivery must have established a record.

Nordisk Medicin, Stockholm

45:991-1028 (June 27) 1951. **Partial Index**

Efficacy of Artificial Respiration. E. Asmussen.—p. 991.
Inoculation Hepatitis. H. Palmer and O. C. Olsen.—p. 995.
Ileus: Experiences with Miller-Abbott Tube. M. Andersen and O. Storm. —p. 998.
Late Prognosis for Asphyxial Children Delivered by Forceps. P. Wetterdal.—p. 1000.
Fibromyoma of Uterus: Survey of 636 Cases. H. Dupont.—p. 1002.
*Ovarian Dysgerminoma. P. Ahnfelt.—p. 1006.
Carcinomatous Pyloric Ulcer. G. Lauritzen.—p. 1008.
Plasmocytoma in Rhinopharynx. K. Zilstorff-Pedersen.—p. 1011.

Ovarian Dysgerminoma.—According to Ahnfelt, the prognosis in dysgerminoma, a relatively rare tumor form, depends on whether the tumor is unilateral, bilateral, or accompanied by metastases. In cases of bilateral tumor the prognosis is poor; in cases of metastases prognosis is apparently unfavorable, even though mestastases and tumor are radiosensitive in high degree. The prognosis is less favorable for patients under 15 and over 40. The tumor is revealed by its expansive growth, and it may develop rapidly. In cases of firm tumors in the pelvis in young women with poorly developed genitalia, dysgerminoma should be considered. In the four cases described, treated at the Norwegian Radiumhospital in Oslo, the patients had normal genitalia. The first patient, with symptoms for at least a year, has continued free from recurrence for 14 years after mainly surgical treatment with removal of both ovaries. In the second case, in a woman aged 23, with symptoms for fully a month and in the third, in a woman aged 27, with symptoms for over a year, removal of one ovary was followed by radiotherapy as in cancer of the ovary; the patients have been well for over 3 years and over 18 months respectively. In the fourth case, in a woman aged 44, with symptoms for months, metastases were the first signs of the tumor. Radiotherapy greatly reduced metastases and tumor, but further metastases appeared, with fatal outcome. In the author's opinion radical removal of the tumor with full radiologic after-treatment is the method of choice in dysgerminoma.

Practitioner, London

167:1-102 (July) 1951. **Partial Index**

Present Status of Cancer Problem. R. W. Scarff.—p. 5.
Malignant Disease in Childhood. J. M. Smellie.—p. 11.
Surgical Treatment of Cancer. A. Brunschwig.—p. 19.
Radiotherapy of Cancer. J. S. Fulton.—p. 29.
Chemotherapy of Cancer. A. Haddow.—p. 36.
Treatment of Advanced Cancer. H. Ogilvie.—p. 48.
Surface Active Agents in Dermatology. R. D. Sweet.—p. 53.

167:103-210 (Aug.) 1951. **Partial Index**

Early Recognition of Mental Disease. D. R. MacCalman.—p. 107.
Mental Disease in the Adolescent. A. S. Paterson.—p. 115.
Obsessive States. A. Kennedy.—p. 122.
Problems of Schizophrenia. H. Wilson.—p. 134.
Pharmacotherapy in Psychiatry. R. Ström-Olsen.—p. 140.
Affective Disorders and Use of Electro-Convulsion Therapy. D. Hill. —p. 147.
The General Practitioner and the Patient's Relatives. R. F. Tredgold. —p. 154.

Praxis, Bern

40:555-574 (July 5) 1951

Modern Treatment of Tuberculosis of Kidneys. E. Schultheiss.—p. 555.
*Antibacterial Activity in Vitro of Aluminum Orthohydroxyquinoline Sulfate. P. Rossel.—p. 561.
New Natural Total Ovarian Product for Ovarian Substitution Therapy. E. Schauenberg.—p. 563.

In Vitro Activity of Aluminum Orthohydroxyquinoline Sulfate.—Favorable results were obtained with aluminum orthohydroxyquinoline sulfate ("aloxyn") given to infants with enteritis caused by Escherichia coli, or with dysentery caused by the Sonne strain of Shigella dysenteriae. The highly satisfactory clinical observations prompted the author's study of the antibacterial activity of this new drug in vitro. The bacteriostatic effect exerted by aluminum orthohydroxyquinoline sulfate is excellent, since 50 γ of the drug prevented growth of Staphylococcus pyogenes aureus, Salmonella typhosa, and the Sonne strain of Shigella dysenteriae, and 100 γ prevented growth of Bacillus anthracis, Salmonella paratyphi B, and S. enteritidis, and 200 γ prevented growth of Escherichia coli. The bacteriostatic effect of the drug was slightly diminished when horse serum was added to the culture medium. Growth of Staph. aureus and of the Sonne strain of S. dysenteriae was observed in the presence of 100 γ of the drug in the culture medium to which the serum had been added, while growth was inhibited by 50 γ of the drug in the absence of the serum. The bactericidal effect of aluminum orthohydroxyquinoline sulfate is equally excellent, since each of the seven different bacteria studied was killed after 30 minutes of contact with the drug. These results should encourage the study of the clinical value of the aluminum orthohydroxyquinoline sulfate. It may be assumed that the new drug will prove useful in the treatment of intestinal infections.

Revista Chilena de Pediatría, Santiago

22:135-180 (April) 1951. **Partial Index**

*Clutton's Joints and Penicillin. J. Rosselot.—p. 147.
Liver and Gallbladder Complications of Typhoid in Children. J. Bauza F. and G. Frascoli P.—p. 154.

Clutton's Joints.—Rosselot reports the clinical history of two boys of 3 and 13 years of age, respectively, with Clutton's joints due to congenital syphilis. When the patients were first observed, they had had symmetrical, almost painless hydrarthrosis of the knee joints for two months. Walking was normal, and the knee joints did not show any osteoarticular lesion roentgenologically. The Kahn test was positive in both cases but there were no other signs of active syphilis. Treatment consisted of intramuscular injections of penicillin given every three and four hours, respectively, in daily doses of 40,000 and 50,000 units for 11 consecutive days up to a total dose of 2,840,000 and 3,000,000 units of penicillin, respectively. The articular pain disappeared on the 1st and 10th day of treatment, respectively. The Kahn test became doubtful in one case and stayed positive in the other. The patients were observed one and one-half years after treatment. Articular hydrarthrosis had disappeared. The Kahn test was negative in one case and doubtful in the other. No symptoms of clinical recurrence of syphilis were evidenced.

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Ugeskrift for Laeger, Copenhagen

113:811-850 (June 21) 1951

*Surgical Treatment of Gastric and Duodenal Ulcer: Postoperative Follow-Up of 219 Cases with at Least Three Years' Observation Time. M. Bjørneboe, H. Faber, O. Mikkelsen and E. Tobiassen.—p. 811.
Right-Sided Resection of Intrathoracal Part of Esophagus. F. Therkelsen.—p. 816.
Talcum as Cause of Postoperative Complications. O. Jepsen.—p. 820.
Combined Orthopedic and Surgical Fixation in Fractures of Jaw. H. Kjaerholm.—p. 825.
Inveterate Facial Paralysis Treated by Plastic Surgery. P. Fogh-Andersen. —p. 828.
Paresis of Facial Nerve with Facial Edema, Furrowed Tongue (Melkersson's Syndrome) and Hemicrania. U. Sagild.—p. 831.
Inaccuracy in Measurement of Blood Pressure and Consequence. H. Geert-Jørgensen.—p. 834.

Surgical Treatment of Gastric and Duodenal Ulcer.—Bjørneboe and his associates state that of 219 patients with gastric or duodenal ulcer, none of whom had acute perforating ulcer, operated on from 1942 to 1945, resection was done in 189 patients, aged mostly from 31 to 60, with 5.8% operative mortality, and gastroenteroanastomosis was performed in 30 patients, aged mostly between 51 and 70, with 3.3% operative mortality. Follow-up from three to seven years of 202 of the 207 patients showed good results in 138 (86%) in the first group, poor results in 22 (14%), with four unable to work, 12 periodically unable to work, and six operated on again. The Billroth 1 procedure was used in 14 of the 22 cases. Of the second group, 20 were well, one was unable to work, two were periodically unable to work, and one had been operated on again. In Krarup's material of medically treated ulcer patients the late results were 29% well and 36% improved.

BOOK REVIEWS

The Diagnosis and Treatment of Adrenal Insufficiency. By George W. Thorn, M.D., M.A., LL.D., Hersey Professor of Theory and Practice of Physics, Harvard Medical School, Boston. With collaboration of Peter H. Forsham, M.D., M.A., Instructor in Medicine, Harvard Medical School, and Kendall Emerson, Jr., M.D., Assistant Professor, Harvard Medical School. Publication number 29, American Lecture Series, monograph in American Lectures in Endocrinology. Edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago. Second edition. Cloth. $5.50. Pp. 182, with 35 illustrations. Charles C Thomas, 301-327 East Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1951.

This valuable little monograph has been revised to include references to more recent use of cortisone and other synthetic adrenal hormones in adrenal insufficiency. The essentials of the signs, symptoms, tests, laboratory findings, and differential diagnosis of adrenal cortical insufficiency are cogently and succintly presented. Treatment is thoroughly discussed, with review of the use of available hormonal preparations and their toxic and undesirable reactions. Case histories from the extensive clinical experience of the author abundantly illustrate the text. An index of the contents would be a helpful addition.

Beitrag zur Radiumbehandlung in der Gynäkologie. Von Dr. med. W. Möbius, Oberarzt der Univ.-Fraunklinik Leipzig, Leipzig. Band 10, Zwanglose Abhandlungen auf dem Gebiete der Frauenheilkunde, Herausgegeben von Professor Dr. Robert Schröder. Paper. 9 marks. Pp. 109, with illustrations. Georg Thieme, Thomaskirchhof 21, (10b) Leipzig C1 (Russian Zone); agent for U. S. A., Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1951.

This book is devoted to the subject of radium treatment in gynecology. The first part takes up the theoretical-experimental aspects of the subject, in the second part the author discusses the clinical aspects, including the treatment of nonmalignant as well as malignant pathologic conditions of the female genital tract. As may be expected the largest amount of space is devoted to radium therapy of carcinoma of the cervix. The author discusses not only the statistical data concerning this type of carcinoma but also the reasons for its treatment by radium, the complications of radium insertion, the technic involved, dosage, and bladder and bowel damage. The other carcinomas discussed are corpus, cervical stump, vaginal, and vulvar. The nonmalignant conditions treated with radium were glandular hyperplasia, erosion of the cervix, leukoplakia of the cervix, uterine polyps, endometriosis, and genital tuberculosis.

That the author is well qualified to write such a book is attested by the array of statistics from his clinic, the University Woman's Clinic in Leipzig. During the years 1937-1943 radium treatment was administered to 670 women with carcinoma of the cervix, with a cure rate of 37%. During the same period of time, in 12 women with cancer of the cervical stump the cure rate was 41.7% and in 78 women with corpus carcinoma the cure rate was 51.3%. In the series of 3,401 cases of all types of cancerous and noncancerous genital disturbances during the years 1937-1948, there were 29 deaths, or 0.9%, resulting from radiation therapy.

The monograph is well written and contains a great deal of useful information for those interested in radium treatment of gynecologic abnormalities.

Primary Anatomy. By H. A. Cates, M.B., Professor of Anatomy and Director of School of Physical and Health Education. University of Toronto, Toronto. Second edition. Cloth. $6. Pp. 344, with 405 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1951.

This book is intended for use by nonmedical students. In this edition, over 100 illustrations have been added and many practical applications have been included. Nurses, physical therapists, occupational therapists, and others should welcome the accurate and clearly labeled anatomic drawings, the many schematic illustrations, and the lucid text.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Medical Jurisprudence and Toxicology. By John Glaister, J.P., D.Sc., M.D., Regius Professor of Forensic Medicine, University of Glasgow, Glasgow, Ninth edition. Cloth. $7. Pp. 755, with 234 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1950.

This volume has been a standard work in the field of forensic medicine for many years, and its success may be measured by the many editions that have been published. By virtue of his long and varied experience, his contributions to the literature and his teaching, the author's equipment is fully recognized, and the previous editions of his book have received wide approval in English-speaking countries.

The current revised and enlarged edition has been improved by the introduction of abundant new material, some concerning recent advances in the forensic sciences and some concerning changes in the laws of the United Kingdom. Notable in the latter connection are the additions to the sections on the liability of hospitals and nursing homes, the law in relation to postmortem dissections, the functions of the Scottish and English coroners and the recent changes in the English statutes governing the National Health Acts, industrial and personal injuries, and the sale and control of poisons. Other new subjects are the medicolegal aspects of artificial insemination and the effects of the atomic bomb.

The introductory chapter is largely devoted to the law governing the practice of medicine and contains a description of the General Medical Council, the Scottish and English legal procedures with their differences and other varied matters concerning public health, malpractice, and related subjects. In the second chapter the usual subjects of medical jurisprudence are discussed, such as the methods and rules of medical evidence, the technique of post-mortem examinations, and the varied related procedures, the laws of exhumation and privileged communication, and among other material the proper methods of obtaining dying declarations. The identification of the living and dead and of human remains, the signs of death, body changes after death, and the laws controlling cremation occupy the following four chapters. Contained in this section are brief descriptions of the Ruxton and Dobkin cases and a summary of the causes of sudden death.

The succeeding chapters are concerned with asphyxial deaths, including drowning, hanging, strangulation, and other traumatic asphyxias. Detailed descriptions of the effects of lightning, electricity, burns, starvation, and deaths from exposure to heat and cold as seen post-mortem are also included. The value of these chapters is enhanced by photographs and descriptive cases.

Under the heading "Medicolegal Aspects of Wounds" the physical characteristics and medicolegal implications of blunt force injuries, incised, penetrating, and perforating wounds by various types of cutting instruments and firearms are discussed and all the recognized data relating to these injuries have received full treatment. Included in this chapter is a short discussion of the blast effects from high explosives.

The medicolegal application of blood examination occupies a chapter, and the significance of such examinations in relation to crime investigation and disputed paternity are fully covered, including the recently developed Rh sub-groups. The remaining chapters in this section on medical jurisprudence are representative of the information usually found in the works of contemporary authors. These comprise the medicolegal implications of impotency and sterility, pregnancy and related subjects, abortion, infanticide, rape, and the laws of the United Kingdom relating to lunacy.

A discussion of the pathways of infection in abortions and their later effects and complications and a more comprehensive consideration of air embolism, which is a frequent cause of sudden death from intrauterine injection, might tend to improve this part of Chapter 12.

In the section on toxicology the effects of various poisons, their treatment, and the post-mortem appearances are discussed. The latter is somewhat superficially treated, and some of the more or less characteristic lesions of some poisons could have

been included. It would also be helpful and enhance the value of this section to the autopsy surgeon if the organs and fluids most suitable for chemical analysis of certain poisons were mentioned after the description of the post-mortem appearances of the various poisons. Recent advances in spectrography and infrared and ultraviolet spectrophotometry deserve consideration, especially the latter in the identification, separation, and quantitative analysis of certain organic compounds and alkaloids, which are demonstrated with difficulty by the ordinary chemical methods. However, these minor issues do not impair the usefulness of the edition, which contains abundant information and covers the field adequately.

No fault can be found with the format of the book. It is excellently written, in clear, logical style; the illustrations with few exceptions are above average, the typography is beyond reproach, and references, mainly selected from the English literature, are ample for further information. This excellent volume can be highly recommended as a textbook of medical jurisprudence and as reference reading for attorneys, criminologists, and others interested in the science of forensic medicine.

Die Lungentuberkulose im Röntgenbild: Entstehung, Verlauf und Begutachtung. Von Dr. Wulfgang Hirsch, Oberarzt am Universitäts-Röntgeninstitut, Leipzig, und Dr. Helmut Liebau, Oberarzt der medizinischen Universitätsklinik, Leipzig. Cloth. 20 marks. Pp. 142, with 82 illustrations. Georg Thieme, Thomaskirchhof 21, (10b) Leipzig C 1; agent for U. S. A., Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1951.

Assmann of the Leipzig Clinic demonstrated the close association between the clinic of tuberculosis and clinical roentgenology. As students of Assmann and Baumann, the latter in the field of the digestive tract, Hirsch and Liebau have compiled this work after many years' observations. The volume is limited to the essentials and is aimed at method and practice from a diagnostic and differential diagnostic viewpoint. A detailed description is presented to make basic observations and study possible. In the interest of early diagnosis and to aid modern combat of tuberculosis, the normal and pathologic roentgen findings are detailed. The various detail methods of technique are utilized, and BCG vaccination is considered as a prophylactic weapon. As an introduction, the normal lung is illustrated as a basis for tuberculous infection and is viewed from the mode of infection, bacteriologic considerations, epituberculosis, the reinfection, and clinical symptoms. The roentgen picture of the tuberculous primary complex, the roentgen picture of generalization, of adult tuberculosis, of mixed forms of pulmonary tuberculosis, pulmonary tuberculosis, as an industrial disease, and BCG for protective vaccination are considered successively. The references are grouped according to subject divisions and are invaluable to a good text.

The book is in German, well prepared, and excellently illustrated, with some colored drawings.

Preparation of Organic Intermediates. By David Allen Shirley, Associate Professor of Chemistry, Tulane University of Louisiana. Cloth. $6. Pp. 328. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, 1951.

This volume contains the methods of preparation for more than 500 organic compounds. These compounds were chosen because they were useful as intermediates in organic syntheses, because they were unavailable commercially or were expensive, or because the reaction may be of a type that is important for the synthesis of a compound of similar structure. The book is similar in content and style to "Organic Syntheses," but it contains no duplicate material. The sources from which the details were obtained are given at the beginning of each preparation. Caution statements appear in italics wherever they are necessary. The book contains a molecular formula index, a reaction type index, and a general index.

Hope and Help for the Alcoholic. By Harold W. Lovell, M.D. Cloth. $2.75. Pp. 218. Doubleday & Company, Inc., Garden City, New York, 1951.

This book approaches the problem of compulsive drinking from a broad viewpoint, interpreting, in language that the laymen can understand, what is known about the latest and most effective methods of treating alcoholism and the heavy drinking habit. The psychosomatic viewpoint of alcoholism is stressed, and some of the emotional factors underlying the disease are described. Detailed methods for self-help, methods for the approach of the physician, and methods of the "Alcoholics Anonymous" group are given. The lay person, either the alcoholic himself or those most immediately interested in his welfare and successful treatment, can glean much useful information from this volume.

Grundriss der traumatischen peripheren Nervenschädigungen mit Berücksichtigung der Berufskrankheiten (vom neurologischen Standpunkt aus gesehen). Von Prof. Dr. G. Bodechtel, Dr. K. Krautzun und Dr. F. Kazmeier. Second edition. Paper. 10.20 marks. Pp. 106, with 78 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart O; agents for U. S. A., Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1951.

In their preface the authors explain that this book is intended not for specialists but for the practitioner who sees occasional cases of peripheral nerve injuries and wishes a general orientation in the subject. The first (general) part of the book discusses the physiological nature of peripheral paralyses and the diagnosis of peripheral injuries. Electrophysiological methods of examination are discussed on pages 10 to 15. The limitations of these methods are frankly stated, and the authors voice the opinion that chronaximetry does not serve any practical purpose in this connection. The second (special) part of the book sketches the results of nerve injuries in the upper extremity, head region, trunk, and lower extremity, discusses differential diagnosis, and describes the phenomena of regeneration and methods of treatment. An appendix contains diagrams and tables useful in electrophysiological testing and, in addition, a table of considerable medicolegal interest which gives the authors' tentative estimates (on a percentage scale) of the occupational handicap resulting from various types of peripheral paralyses. The book lacks an index, but is well written and well illustrated.

Organization and Pathology of Thought: Selected Sources. Translation and commentary by David Rapaport. Cloth. $10. Pp. 786. Columbia University Press, 2960 Broadway, New York 27, 1951.

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The purpose of this volume is to focus scientific attention on the various methods of investigation and views of thought processes that have been reported in the foreign language literature. The author has drawn on the literature of psychology, psychiatry, and psychoanalysis from the German and French.

Twenty-seven translations of articles are presented which relate to study of states of consciousness, such as dream or hypnagogic states. Technics described include comparison of behavior and introspection, introspection in the performance of tasks, self-recording of daydreams, dream suggestion, story recall, and several other special methods.

The author has brought together material concerning pathology of thinking and other aspects of the thought process, interest in which he feels has been recently on the wane in this country. Comments on each of the papers presented is made and summed up in the author's conclusion, which provides concepts tending toward the development of a "theory of thinking." The author is at present research associate at the Austen Riggs Foundation and was formerly director of research at the Menninger Foundation.

Your Blood Pressure and You. By George Halperin, M.D. Paper. $1. Pp. 94, with 6 illustrations. Brownlee and Shaw, 1227 Loyola Ave., Chicago 26, 1951.

As a prescription for the hypertensive patient this booklet should prove useful to physicians and helpful to patients. Written in simple and straightforward language and in the tone of a friendly counselor, it explains to the patient what hypertension is, how the body adapts to it, and what can be done to relieve symptoms and permit the hypertensive to lead a normal and useful life. Based on the theory that understanding diminishes fear, it explains briefly the complications that sometimes occur with hypertension, but minimizes their frequency and reassures the patient that moderation in all things will help to prevent such complications. The effects of emotion on blood pressure are discussed briefly, and the importance of equanimity in the control of hypertension is stressed. Included, also, is a conservative discussion of therapy and prognosis with a nice balance between caution and reassurance. The booklet is recommended for patients with hypertension.

Anesthesia in General Practice. By Stuart C. Cullen, M.D., Head of Division of Anesthesiology, Department of Surgery, State University of Iowa Hospitals, Iowa City. Third edition. Cloth. $4.50. Pp. 292, with 36 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1951.

The author again very ably presents the fundamentals associated with the safe utilization of anesthetic and other depressant drugs, the efficient application of oxygen therapy and the recognition and treatment of shock. Since the first edition appeared (1946) 32 pages have been added. The first chapter, which formerly dealt only with the preanesthetic medication, has been wisely revised to include useful information regarding not only the fundamental properties of depressant drugs and their use before anesthesia, but also their most effective and safe employment during and after anesthesia and surgery. Inclusion of the adverse reactions associated with various agents and methods of anesthesia and their proper management is one of the most valuable aspects of this publication. The section dealing with curare has been expanded to include other muscle relaxants, and brief discussions regarding the intravenous use of alcohol and procaine have been added. Additional pertinent information regarding more satisfactory and safer practices with the use of thiopental sodium has been included.

The printing and binding of this edition in a more modern color are very satisfactory. This volume should prove of great value not only to the general practitioner, but also to the advanced medical student, surgeon, and beginning anesthesiologist.

Manual Therapy. By James B. Mennell, M.A., M.D., B.C., Consulting Physician in Physical Medicine, St. Thomas's Hospital, London. Publication number 85, American Lecture Series, monograph in American Lectures in Physical Medicine. Edited by W. A. Selle, Ph.D., Professor of Biophysics, University of California Medical School, Los Angeles. Cloth. $2.25. Pp. 64, with 10 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1951.

This monograph provides the reader with a simple and clear explanation of Mennell's concept of joint manipulation. The reader may not agree with Mennell's first basic law to be observed in restoring lost joint motion: "The movements which are not under voluntary control must always be restored before those that are under voluntary control." Nevertheless, these opinions based on Dr. Mennell's vast knowledge of human anatomy are worthy of critical consideration by the physician concerned with the problem of restoration of lost joint motion. The chapters on massage, passive movements, assisted movements, and resisted movements, cannot possibly present these subjects in any detail in this small monograph. They do contain some interesting comments based on the author's many years of clinical experience. There is no bibliography.

Time's Arrow and Evolution. By Harold F. Blum. Cloth. $4. Pp. 222, with illustrations. Princeton University Press, Princeton, N. J., 1951.

This book is occupied with the question of whether evolution ever reverses its direction and, more generally, with the problem of the irreversibility of time. If time is a fourth dimension of the universe as we experience it, why do we feel that it differs from the other three in that we are bound to proceed along it, relentlessly, in one direction? Though this question may be unanswerable or even meaningless, the reader is taken through a fascinating review of the philosophical, chemical, physical, and biological aspects of the problem, and the wealth of up-to-date factual material presented makes the adventure profitable. The book can be recommended to students as an introduction to the philosophical aspects of biology.

Taschenbuch der Anatomie. Band 3: Nervensystem; Sinnessystem; Hautsystem; Inkretsystem. Von Professor Dr. med. Hermann Voss und Dozent Dr. med. habil., Dr. phil. Robert Herrlinger. Third edition. Boards. 10 marks. Pp. 322, with 134 illustrations. Gustav Fischer, Villengang 2, Jena 15b, 1951.

The present small volume manages to cover the anatomy of the nervous system, sense organs, skin, and endocrine organs with remarkable completeness, accuracy, and clarity. Its 134 diagrams are all directly labeled with unabbreviated terms, and there is an excellent index. The book can be highly recommended to students with a reading knowledge of the languages.

Clinical Tropical Medicine. Edited by R. B. H. Gradwohl, M.D., Luis Benitez Soto, M.D., and Oscar Felsenfeld, M.D. Cloth. $22.50. Pp. 1647, with 479 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1951.

This textbook, by 57 authors and three editors, is the latest addition to several new textbooks on tropical medicine. The contributors in many instances have had detailed, first-hand experience with their subjects, and they originate from many parts of the world. Unfortunately, the text is too long, and it appears that an attempt has been made to present in one book the more important features usually found in textbooks dealing with parasites, arthropods, mycology, and general clinical tropical medicine. The subject matter in some chapters is presented in great detail, while in other chapters the subject matter receives cursory treatment. The book is profusely illustrated, and in many instances the clinical illustrations are excellent. However, the illustrations dealing with the lesions produced by protozoa are insufficiently magnified and do not contribute anything. The sections on treatment of tropical diseases appear to be unnecessary duplication. It is unlikely that this can be used as a handbook for the general practitioner.

Tratado de endocrinología clínica. Tomos I y II. Por Juan C. Mussio Fournier, et al. Cloth. Pp. 1226; 746, with 335 illustrations. Edit. Guillermo Kraft Limitada, calle Reconquista 319-327, Buenos Aires, [1950].

Many books have been written on endocrinology but seldom has one covered the field so minutely as this one. The treatise consists of a first volume containing 1,225 pages divided into 51 chapters and a second volume of 746 pages divided into 18 chapters. Each chapter is followed by a well-organized bibliography; there are numerous pictures, charts, and graphs that illustrate the subjects discussed. Each endocrine gland is considered separately with reference to the embryology, anatomy, histology, anatomic pathology, physiology, and experimental physiology, and its treatment. Much emphasis is given to the subjects of physiology and experimental physiology and methods of treatments, not only on animals but also on human beings. The basic thesis is that only through experimentation with human beings is it possible to evaluate the effect of certain drug on the individual as a unit and the effect on the endocrine system and on the endocrine syndrome considered. This is an interesting approach and should prove its usefulness when more experience is accumulated and the results compared with those of other workers in the field.

As in any book with extensive coverage and with several collaborators, there are some repetitions and overlapping. This may be necessary for the sake of complete coverage.

The treatise is completely written in Spanish, but the bibliography includes many English books, articles, and journals. The form of the book makes pleasant reading matter and has interesting reference to personal clinical histories.

Functional Neuro-Anatomy Including an Atlas of the Brain Stem. By A. R. Buchanan, M.D., Professor of Anatomy, University of Colorado School of Medicine, Denver. Second edition. Cloth. $7.50. Pp. 323, with 273 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1951.

This textbook has proved very popular. In preparing the second edition the author added a cross section atlas of the brain stem which consists of 74 figures and 75 pages. This new section, like the remainder of the book, is well done. This book presents the difficult subject of neuroanatomy in a clear and concise manner, ideal for the medical student. Much of the detail that would be desirable in a reference book or for advanced students has been wisely omitted here. The author has included just enough clinical data to whet the student's interest and to indicate the functional significance of anatomic structures. The press work is good, and the figures are well reproduced. There is a limited but very adequate bibliography and a satisfactory index.

Just Be Patient. By Emidio Angelo. Paper. $1. With cartoons. John C. Winston Company, 1010 Arch St., Philadelphia 7, 1951.

This is a collection of cartoons that should tickle the fancy of practically any physician and is the sort of thing that can be passed along to some patient who is in need of a cheerful few minutes. This should help to take the ill out of illness.

QUERIES AND MINOR NOTES

REACTIONS FOLLOWING USE OF TETANUS ANTITOXIN

To the Editor:—*Of late I have seen several allergic reactions from the administration of tetanus antitoxin. These reactions are usually urticarial and occur about a week after administration. They frequently result in distress and loss of time from work. Tetanus antitoxin is never given in my office without a prior subcutaneous test dose. I have tried every means of preventing these delayed reactions, including antihistamine medication, but have not been able to prevent them. It is impossible in most of these cases to immunize the patients with toxoid. What other steps can be taken to prevent these reactions?*

M.D., New Jersey.

Answer.—It is necessary to differentiate between early and delayed reactions to serum. Concerning the prior subcutaneous test dose, such a precaution is intended to avoid acute accidents; its employment has no relation to delayed reactions, such as urticaria, appearing seven or more days after injection. The foregoing syndrome represents acquired serum sensitivity, impossible of prediction by available technics.

Concerning the prophylaxis of early reactions, attention is directed to the routine outlined in the answer to the query on "Skin Test Technic" in The Journal, Jan. 1, 1949, page 68. While this routine has minimized the incidence of acute reactions, its limitations in avoiding delayed serum sensitivity are recognized. It has been found advantageous to employ either oral or injectable cortisone preparations to allay the acute inconvenience occasioned by delayed serum sickness. The leading biological houses are trying to develop a group of therapeutic antitetanus serums devoid of the immediate and delayed reaction-producing properties delineated in this query and in the literature at large.

Concerning the incidence of serum reactions (both acute and delayed), any statement on this phase of the subject must necessarily be only as determinate as the circumstances delineated. Thus, the allergic status of the patient, the history of number and amounts of previous homologous serum injections, the quantities employed, the manufacturing processes used, and other intangible factors must be included in the formulation of an answer to the question. Thus, the incidence of delayed serum sickness varies exponentially as the dose of antitoxin employed. For a complete discussion of this subject, reference to the following publication is recommended: Ratner, B.: Allergy, Anaphylaxis, and Immunotherapy, Baltimore, The Williams & Wilkins Company, 1943.

TUBERCULOSIS PATIENTS IN GENERAL HOSPITALS

To the Editor:—*Is it generally accepted that patients with pulmonary tuberculosis may be admitted to private rooms in the general hospitals? What is the consensus regarding precautions against infecting personnel, and what is the best method to prepare the room for the subsequent patient?*

M.D., New Jersey.

Answer.—In a great many hospitals tuberculosis patients are admitted, and suitable quarantine set up. This includes destruction of all septic material, careful mask and gown technique by physicians, nurses, and attendants, as well as proper quarantine methods in handling dishes, bedding, and other articles. The room may be prepared for subsequent patients by a complete washing of walls, floors, and furniture, a change of bed linens, and removal or cleansing of other objects in the room. A good soap and water washing is all that is needed, followed by exposure to fresh air and sunlight or ultraviolet light.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

STIFF JOINTS AND CHRONIC PROSTATITIS

To the Editor:—*A white man, 42, has joint stiffness and chronic prostatitis. Prostatic secretion expressed by massage showed hemolytic streptococci and Bacillus coli. Sensitivity tests were done using penicillin, bacitracin, terramycin, streptomycin, chloramphenicol, and aureomycin. Terramycin was the only one to which both organisms were sensitive. May one expect good results with an autogenous vaccine?*

J. Reginald Myers, M.D., Everett, Pa.

Answer.—Evidence of chronic prostatitis may be found in many men over 40. In most cases the infection is mild and is of no clinical significance. Permanent elimination of chronic prostatic infection by the accepted methods of treatment frequently is difficult. Antibiotic medication often has been of value in acute infection but seldom in chronic cases. Vaccines even when autogenous have not proved to be efficacious. It would be difficult to prove that chronic prostatic infection is the cause of recent joint stiffness complained of in this case. The existence of other foci of infection, such as teeth and tonsils, should be eliminated. It would be well to make a thorough physical examination including roentgenographic examination of the skeletal areas in order to rule out other diseases.

AN ENEMA OF ISOPROPYL ALCOHOL BY MISTAKE

To the Editor:—*A 7 year old boy was given an enema of one cupful of isopropyl alcohol, by mistake, for fever caused by measles. When seen he was in deep coma without reflexes but was not cyanotic; his pulse was very poor and thready, and respirations were slow and shallow. Treatment with ephedrine and caffeine produced prompt recovery from the coma. He was left with a mucoid diarrhea and severe gastritis. The measles is now running its course, and the gastrointestinal upset is subsiding. What is the denaturing agent, if any, in isopropyl alcohol? Are there any long-term effects from isopropyl alcohol?*

M.D., Illinois.

Answer.—Isopropyl alcohol, because of its disagreeable odor and taste, requires no denaturing agent. The symptoms noted in the above case were probably entirely due to isopropyl alcohol, which possesses an acute narcotic potency about double that of ethyl alcohol. A cup would contain about 250 cc. of isopropyl alcohol. The toxic dose in rabbits is 3.23 cc. per kilogram of body weight, corresponding to about 96 cc. in a 30 kg. child. If a third of the alcohol were absorbed rectally, toxic symptoms of deep narcosis might result. In high concentration the alcohol would be a direct irritant of the gastrointestinal tract, which would account for the diarrhea and cramping. There should be no long-term effects in this case. Treatment for isopropyl alcohol narcosis would be the same as for acute alcoholic coma. The stomach (or, in this case, the colon) should be lavaged to remove any unabsorbed alcohol. If the temperature is depressed, adequate warmth should be maintained. Should deep cyanosis develop, carbon dioxide and oxygen inhalation is indicated. Cerebral stimulation with caffeine and amphetamine derivatives also may aid in recovery.

HARD WATER AND KIDNEY STONES

To the Editor:—*What is the effect of hard water and softened hard water in the production of kidney stones?*

M.D., Illinois.

Answer.—Neither hard nor softened hard water is directly responsible for the production of kidney stones. However, in persons who already have calcium stones or a predisposition to their formation, hard water will aggravate the condition because of its calcium content. The pH of the softened water may play a role, depending on the type of urinary calculus and the amount of water ingested.

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GUILLAIN-BARRÉ SYNDROME

To the Editor:—*A man, 50, had a severe attack of coryza, sore throat, cough, and fever. This cleared up after 10 days but was followed by pain in the low back, gradually extending downward and increasing in intensity. Cortisone gave almost complete relief, but progressive weakness ensued, and the patient has not been able to walk for the past three weeks. Cortisone was discontinued one week ago. The weakness has gradually involved the muscles of the arms and shoulders. The pain in the legs has disappeared. Neurological examination showed a complete loss of abdominal, patellar, and Achilles reflexes, a diminution in the biceps and triceps reflexes, a loss of motor power in the legs, arms, and hands, and moderate atrophy of the leg muscles bilaterally. The blood cell count showed white blood cells 10,600, red blood cells 5,210,000, hemoglobin 16.1 gm., platelets 614,000, reticulocytes 1.8%, and a normal smear. The packed red cell volume was 64%; the sedimentation rate 0.9 mm. per minute; the thymol turbidity 10 units; and a blood Kahn test was negative. The spinal fluid pressure was 180 mm. of water; dynamics were normal; there were no cells; protein was 228 mg. %; sugar 83 mg. %; chloride 702 mg. %; colloidal gold 1-1-1-2-2-2-1-0-0; and serology negative. We have made a diagnosis of infectious neuronitis or Guillain-Barré syndrome, sometimes called Landry's ascending paralysis. There has been but little improvement after one month of treatment by gentle massage, passive motion, and moist heat. Will you suggest any additional treatment? Would adrenal cortex extract be helpful in this case? What is the prognosis?*

R. A. Ireland, M.D., Charleston, W. Va.

Answer.—The evidence presented amply supports the diagnosis of Guillain-Barré's syndrome. The volume of packed red blood cells of 64% calls to mind a report by David Johnson and William Chalgren (*Neurology* **1**:53-67 [Jan.-Feb.] 1951) of polyneuritis associated with polycythemia, in which inadequate nutrition or oxygenation of the smaller nerves was assumed to be secondary to generalized vascular congestion. However, polycythemia vera evidently may be excluded in the case now under consideration.

There is no specific treatment for this type of polyneuritis, and continuation of physical therapy would be in order. It may be safer to avoid the too general application of heat during any one treatment. While the patient is confined to bed, support for feet and toes should be provided, so that contractures will not develop. When the patient's strength permits it, muscle-training exercises are indicated. The administration of adrenal cortex extract seems to be of doubtful value. In another patient, whose illness had progressed steadily to a wheel chair stage over a period of more than three years, examination of the stools revealed Endameba histolytica, the treatment of which was followed within two weeks by improvement that continued until recovery was complete. However, this may have been coincidental.

Varying mortality rates have been given. In a series of 35 cases, Gilpin, Moersch, and Kernohan (*Arch. Neurol. & Psychiat.* **35**:937-963 [May] 1936) reported a fatal outcome in 14%. Generally, if the illness ceases to progress the patient will recover completely. Major remisisons and recurrences are not common.

RHEUMATIC FEVER

To the Editor:—*I would like to inquire about the frequency of rheumatic fever in or about Tucson, Ariz. What parts of the United States have the lowest incidence of rheumatic fever?*

John D. Sturgeon Jr., M.D., Uniontown, Pa.

Answer.—The exact incidence of rheumatic fever in the Tucson area is not known, but the information available indicates a very low incidence. Recurrence rates in children in that area who had contracted rheumatic fever elsewhere are extremely low—less than 10% of recurrences in high incidence areas. The "Ninth Rheumatism Review," published in the *Annals of Internal Medicine* (**28**:94 [Jan.-Feb.] 1948), provides much information on incidence of rheumatic fever in various geographical areas.

MYOCARDIAL INFARCTION AND TRAUMA OF CHEST

To the Editor:—*A 62 year old man fell between a truck and a loading platform, injuring the left anterior-lateral aspect of the chest and the anterior aspect of the abdomen. There was a clearance of about 1 ft. between the truck and the loading platform, and he fell a distance of about 4 to 5 ft., from the platform to the ground. Some 20 days later x-rays revealed a bilateral pleural effusion with increased sedimentation rate and elevated blood count, associated with dyspnea, cyanosis, and low grade fever. It has been necessary to tap his right thorax on numerous occasions. Aspirations amounted to 750 to 1,500 cc. The sedimentation time was 30 seconds. Results of gastrointestinal examination and a barium enema were within normal limits. Electrocardiograms showed a healing anterior infarction. The cardiologist believes that the patient is suffering from an aneurysm of the left ventricle, probably due to an old anterior infarction. Is the patient's hydrothorax due to the trauma or to circulatory disturbance. X-rays have revealed hypertrophic osteoarthritis and sclerosis of the femoral artery.* *John S. Papa, M.D., Bristol, Conn.*

Answer.—The date of the electrocardiograms is not stated, but evidently they were taken within the first three weeks following the injury. The description is that of acute anterior myocardial infarction in the process of healing. Although it is unusual for infarction to result from trauma, it is a definite possibility; in this case it would seem to be a probability. If so, it is doubtless based on previous coronary atherosclerosis.

The hydrothorax may also be the result of intrathoracic trauma, but, if the heart is enlarged and in failure, the explanation of the hydrothorax may rest therein. Perhaps both factors are responsible. Coincidental bilateral pleuritis is also possible.

IODIDES AND TUBERCULOSIS

To the Editor:—*I have been using a preparation containing 2½ grains (0.15 gm.) of potassium iodide three times a day in the treatment of arteriosclerotic vascular disease. After using this rather freely for prolonged periods, I have wondered about the possible danger of causing a flare-up of an unsuspected tuberculous focus. Do you think the probability of this is enough to advise limiting the use of the potassium iodide?*

D. V. Anderson, M.D., Bremerton, Wash.

Answer.—The probability of causing a flare-up of an unsuspected tuberculosis is practically nil with the dosage specified. After all, iodide has actually been used in the treatment of tuberculosis by a few earlier authors. If small dosage would cause much damage, certainly it would have been discovered by those authors as well as the many who have used the drug for arteriosclerosis. It is true that iodides have been found to soften tubercles and presumably cause the bacilli to spread, but it is questionable if the small dosage will make much difference, except in a verified case of active tuberculosis, in which it is, today at least, contraindicated.

SWELLING OF INFANT'S FEET

To the Editor:—*What is the etiology of pitting painless edema of both feet in a white female infant from birth, which still persists after two and one-half months? Blood serology and chemistry are normal, as is urine. There is no evidence of cerebral cardiovascular disease. The infant is gaining well. Edema is stationary, limited to dorsal and plantar aspects of the feet.* *F. M. Dougherty, M.D., Pottsville, Pa.*

Answer.—The swelling of the feet noted since birth in this 2½ month old infant is probably not a true edema. The commonest localized swelling, with pitting, is caused by an infiltration of the subcutaneous and deeper tissues by lymphangiomas or lymphangiectases. They occur not infrequently on the extremities, the commonest sites being the neck and axilla. These tumors feel soft and doughy on palpation; they are difficult to outline; and cystlike masses of lymphangiectasis are often included in them. A certain differentiation from lipoma or neurofibroma can be made only on biopsy. Hereditary lymphedema is usually more extensive. Trophedema, which is a permanent edema of the feet or legs, is a dominant hereditary trait.

UTERINE TUBERCULOSIS IN PREGNANCY

To the Editor:—*In January, 1949, a white woman (now 28) gave birth to her first child, who died three weeks later. Autopsy revealed miliary tuberculosis of the lungs—the first indication that the mother had tuberculosis of the cervix and endometrium without evidence of disease elsewhere. She was treated with dihydrostreptomycin, 1 gm. daily for 120 days. There was no side reaction to the drug, and clinical response was excellent. Subsequent studies revealed no evidence of disease. The patient is now pregnant again and is in her sixth month. The pregnancy has been uneventful. If the patient remains well, should she receive streptomycin before and/or after delivery prophylactically? If both mother and baby are well at the time of birth should the baby receive streptomycin prophylactically?* *M.D., Louisiana.*

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—Since there appears to be no disease at present, it is advisable to allow the pregnancy to proceed to term and make the decision at that time regarding the course of treatment. If the baby appears normal, acts normally, and begins to grow normally, nothing should be done. If it begins to lose weight, and especially if x-rays show any suspicious lesions in the chest, miliary or infiltrative, streptomycin should be given. The dosage is 0.1 gm. a day for 10 days, then every third day for 90 days. At the same time 0.25 gm. sodium paraaminosalicylic acid should be given by mouth, four times a day. If gastrointestinal symptoms appear, a week's rest should be given and the paraaminosalicylic acid tried again.

As to the mother, the same "wait and see" method should be followed. She may not, probably will not, need any treatment. But right now, repeated cervical smears should be studied for tubercle bacilli by animal inoculation. Also the placenta should be sectioned after delivery for signs of tuberculosis. If tuberculosis is found, a prophylactic course of streptomycin and paraaminosalicylic acid should be given, 1.0 gm. of streptomycin or 1.5 gm. of dihydrostreptomycin and 12 gm. of sodium paraaminosalicylic acid a day in four divided doses. If nausea results, dimenhydrinate (dramamine®) may be used successfully to control it. The time of treatment again depends on the course; generally, 60 days should be sufficient.

Answer.—1. If the mother remains well, it would not seem rational to treat her prophylactically with additional streptomycin either before or after delivery. 2. If both mother and baby are well at the time of birth, it would not seem rational to treat the newborn baby prophylactically with streptomycin, for, if the tuberculosis in the mother is completely healed, she would not transmit the disease to her offspring.

HARMFUL EFFECTS OF SNUFF

To the Editor:—*What are the harmful effects, if any, of snuff?* *Robert S. Srigley, M.D., Hollis, Okla.*

Answer.—Snuff, a preparation of treated and powdered tobacco, generally has a lower nicotine content than smoking tobaccos, but otherwise has a similar composition. If chewed or "dipped," its effects are similar to those of chewing tobacco, but when taken in the more usual manner, through the nose, there are additional local effects owing to the direct irritation of the mucosa and to the pressure effects of the resultant sneezing. Thus there has been described a chronic hyperplastic rhinitis in habitual snuff-takers and the production of headaches from its use. In addition, the snuff-user is exposed to the antigenic constituents of tobacco, so that allergic manifestations may develop in susceptible persons. The nicotine effects, particularly on the circulatory and nervous system, are similar to those observed in smokers. A special hazard among snuff-users is the development of lead poisoning, numerous instances of which have been reported, as a result of the lead present from insecticides sprayed on the tobacco plant, of the addition of lead chromate as a coloring matter in some snuffs, or more commonly of lead absorbed from the lead foil wrapping around the snuff.

References:

Gaede, D.: Zur Wirkung des Schnupftabaks, Arch. Exper. Path. u. Pharmakol. **203**: 130-145 (June 8) 1944.

Reitzel, R. J.: Lead Poisoning from Snuff, Ann. Int. Med. **3**: 378-385 (Oct.) 1929.

MITRAL VALVULOTOMY

To the Editor:—*What is the consensus among cardiologists as to the rationale of mitral valvulotomy in the treatment of mitral stenosis?* *Dorn S. Hower, M.D., Lewistown, Pa.*

Answer.—Mitral valvulotomy, or better termed commissurotomy, for the treatment of serious grades of mitral stenosis is being carried out in clinics in several cities at present. Both the technique and the indications for the procedure are being studied and improved. It has already shown its value in a significant number of cases but needs further perfection.

FOUR OPERATIONS FOR GALLSTONES

To the Editor:—*In* The Journal *of May 19, 1951 (page 297), there is a query ("Four Operations for Gallstones") on how to prevent the new formation of gallstones in the common duct in a patient who has been operated on four times for this malady. The answer rightly stresses that in most of these cases the stones are not newly formed but have been overlooked at operation. This incident, which probably happens in 10 to 30% of such operations, does not indicate faulty surgical technique; it demonstrates only the limitations of surgery in dealing with common-duct stones. Immediate cholangiography is an excellent aid for the detection of stones before the duct is opened and explored. However, for determining whether after exploration all stones have been removed, the method is of limited value, owing to the inevitable presence of disturbing air bubbles in the ducts and leakage around the opened duct. Immediate cholangiography cannot replace the clear cholangiograms done postoperatively on a duct that has been closed watertight around the drainage tube.*

Apparently, it is not well known that we have a simple and safe method for removing postoperatively stones that have remained in the common duct. It is the ether method, developed almost 20 years ago. Ether, or an ether-alcohol mixture, injected drop by drop, on the stones through the draining tube dissolves the cholesterol framework, whereupon the stones gradually crumble down to a brown mud, which passes readily through the papilla into the duodenum. This is not a blast or flush method. It is a slow-working dissolving method, which requires time. Small quantities of ether are to be used, but the wash-out may be repeated ad libitum. Any pressure pain caused by the ether vapors should and can be avoided. The T-tube commonly in use is not suitable. A simple catheter or, better, a double-barreled tube is introduced downward on the obstructing stones. The time required for the dissolution of the stones varies between 1 and 10 weeks. In my series of 73 cases, in which the method was used, full success was obtained in all, and in no instance was a second operation necessary. In a recent article (Ann. Surgery **133:**174 [Feb.] 1951) *Strickler and his group from the University of Minneapolis fully confirm these statements and observations about this useful method.* *B. O. C. Pribram*
910 Fifth Ave., New York 21.

PREFRONTAL LOBOTOMY

To the Editor:—*In* The Journal *of August 11, page 1458, appears a query concerning prefrontal lobotomy. The query describing the major operation, with the use of a trephine opening, as being "rather damaging to the personality," is answered quite properly. However, the statement is then made that the minor operation of transorbital lobotomy is "safe, effective, and free from the disagreeable personality changes."*

There are many who disagree with this latter statement and would question (1) whether transorbital lobotomy is a minor operation, and (2) whether it is safe and effective. We have had so many doubts about the whole procedure at Saint Elizabeths Hospital that we have declined to permit any transorbital lobotomy to be performed at this hospital. I feel that a scientific journal would do well to strike a somewhat more cautious note concerning a procedure about which there are very grave doubts in the minds of many persons in the psychiatric field.

Winfred Overholser, M.D.
Superintendent
Saint Elizabeths Hospital
Washington 20, D. C.

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